



NATIONAL  
GEOGRAPHIC

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# HISTORY



GENIUS OF THE  
RENAISSANCE

## DAVINCI

**PLUS:**

- HOW THE AZTECS LIVED LONGER
- THE RISE AND FALL OF ANNE BOLEYN

APOCALYPTIC  
AUTHORS OF  
THE DEAD  
SEA SCROLLS

SEVEN  
WONDERS  
HISTORY'S  
ULTIMATE LIST

POMPEII  
DEATH OF A CITY

PETERSBURG  
LEE'S LAST STAND

eye to eye

# Durban

SOUTH AFRICA



“

Every time I take a flight, I am always mindful of  
the many people who make a  
successful journey possible.

Inkosi Albert John Lutuli, Nobel peace prize 1960,  
Zulu Tribal Chief, 1936-1967 (Durban)

”

Durban (in Zulu 'eThekwini', derived from itheku meaning a bay or lagoon). A city established in 1824 on land granted by King Shaka. A fusion of citizens of Zulu, English and Indian heritage. A tourist mecca for over 150 years.



## Welcome

to the first issue of *National Geographic History!*

“Learning never exhausts the mind,” said Leonardo da Vinci. “The noblest pleasure is the joy of understanding.” Our new magazine aims to live up to these timeless ideals—within its pages you can embark on a journey through millennia of humankind’s fascinating history. Guided by our experts, you can relive significant events, explore exotic places, and meet extraordinary people from ancient civilizations through to the medieval and modern worlds.

Our ambition is to bring new understanding to familiar topics and to inspire you to discover new areas of history. In this issue we look beyond the artistic brilliance of Leonardo da Vinci to examine his scientific genius, centuries ahead of its time. We also trek into the dusty deserts of Judaea to investigate the mysterious apocalyptic authors of the famous Dead Sea Scrolls. Through stunning visuals we tell the terrifying story of the catastrophic volcanic eruption that buried Roman Pompeii. And, almost exactly 150 years after the end of the American Civil War, we take an in-depth look at the sudden and dramatic collapse of the Confederacy.

History is much more than facts, dates, arguments, and opinions—it is a wonderful story. We hope you enjoy it.

A handwritten signature in black ink that reads "Jon Heggie".

Jon Heggie, Managing Editor



# NATIONAL GEOGRAPHIC HISTORY

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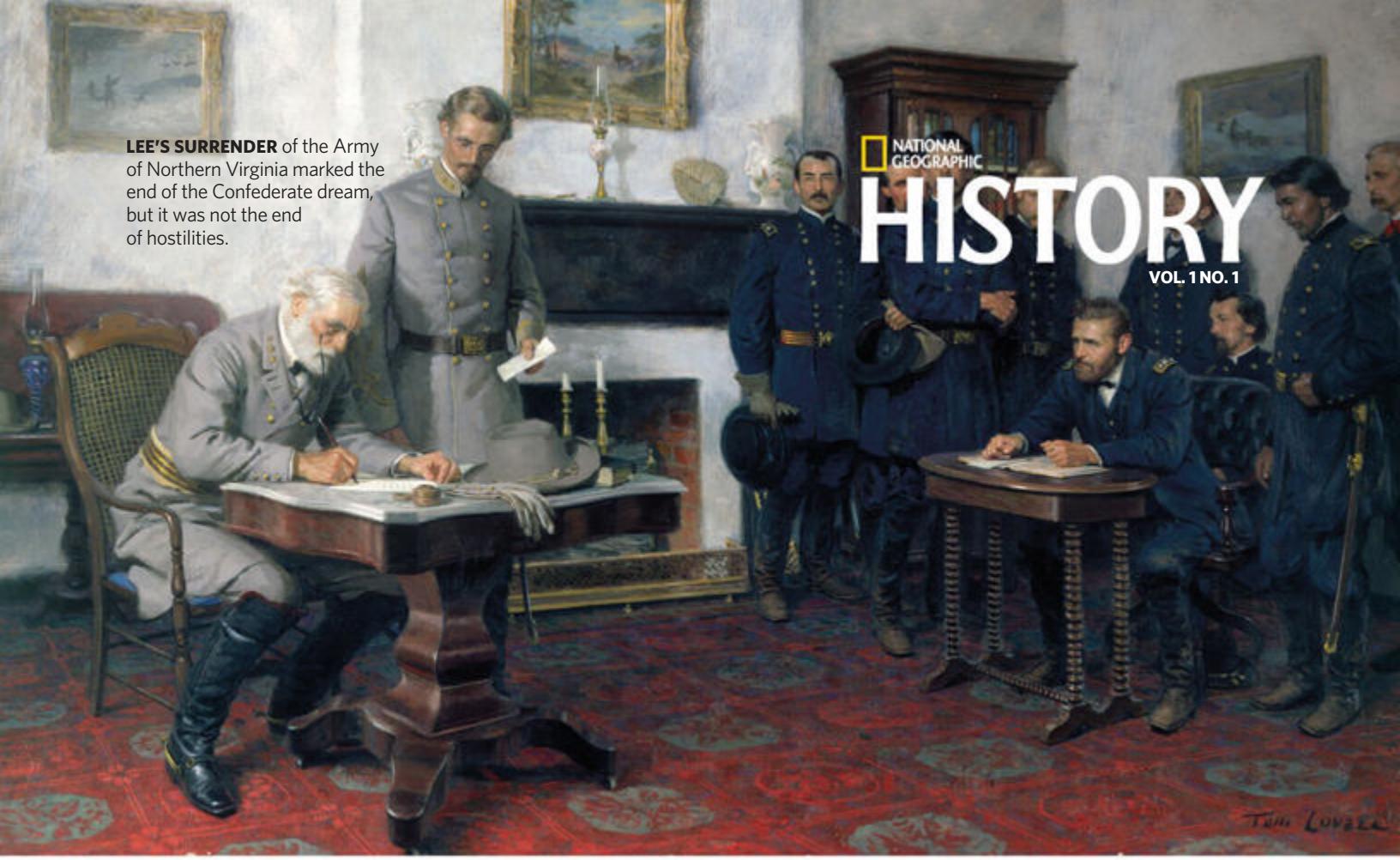
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**LEE'S SURRENDER** of the Army of Northern Virginia marked the end of the Confederate dream, but it was not the end of hostilities.

NATIONAL  
GEOGRAPHIC

# HISTORY

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GODDESS TLAZOLTEOTL, HUASTECA PERIOD (900-1521). BRITISH MUSEUM, LONDON





**PASCAL COTTE'S COMPANY** has studied several works of art by the enigmatic Renaissance artist Leonardo da Vinci (pictured above) including his world-famous "Mona Lisa." The full results of their study of "The Lady with an Ermine" have been published in the book *Lumière on the Lady with an Ermine*.

#### RENAISSANCE ART

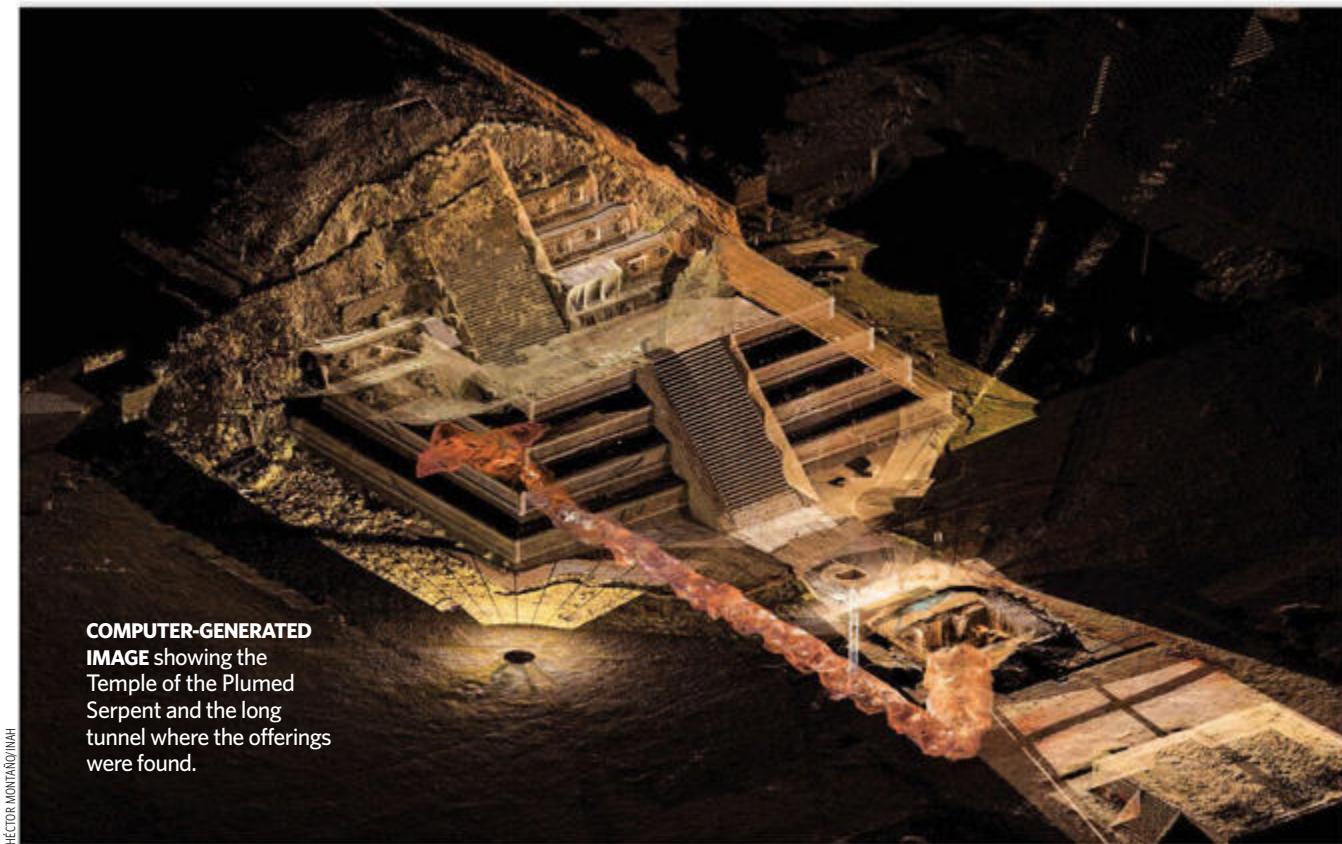
# The Lady and the Emerging Ermine

A French company, using a new light-based technology, has discovered two underlying versions of Leonardo's painting.

The painting "Lady with an Ermine" is much more than it appears as French engineer Pascal Cotte can tell you. He has spent three years painstakingly revealing the secrets that this 1490 Leonardo da Vinci masterpiece has hidden for over five centuries. Probably the biggest surprise is that the painting started out without any ermine at all. To reach Leonardo's earlier renditions without damaging

the artwork, Cotte used a technique called reflective light technology. It submits the painting to a series of intense lights from which data is drawn and analyzed to reconstruct the underlying layers. This has allowed Cotte to find two older versions behind Leonardo's masterpiece. The "lady" is known to be Cecilia Gallerani, the young lover of Ludovico Sforza, the Duke of Milan, who Leonardo worked for from 1482 to 1499. Ludovico's

nickname was "the white ermine," which explains the symbolic inclusion of the animal in his lover's portrait. Yet the earliest version shows Cecilia Gallerani depicted fully dressed in scarlet without any ermine in her folded arms. A second version shows her left sleeve changed to blue and the ermine in a darker, grayish hue. This was probably not to the Duke's liking, and Leonardo reworked the painting into its current form. ■



HÉCTOR MONTAÑO/INAH

**COMPUTER-GENERATED IMAGE** showing the Temple of the Plumed Serpent and the long tunnel where the offerings were found.

#### PRE-COLUMBIAN AMERICA

# The Find Under the Plumed Serpent

Archaeologists working in the tunnel under the Teotihuacan temple have found three chambers full of offerings.

**B**ack in 2003, a heavy rainfall literally opened the way to an amazing find. The ground in front of the Temple of the Plumed Serpent, in Teotihuacan (Mexico), gave way, leaving a 32-inch gaping hole. When the archaeologists of the Mexican National Institute of Anthropology and History investigated this cavity they found that it was 60 feet deep, leading to a 335-foot tunnel that went underneath the temple. It

had apparently been closed by the Teotihuacan people about 1,800 years ago.

Since that discovery, tons of stone and gravel have been removed using specially designed robots to lead the way into the tunnels. All these efforts have led the archaeologists to the threshold of three chambers. Along the way they've found an astonishing amount of offerings, from small statues to oilcloth balls and jade and pyrite disks. According to Sergio Gómez

Chávez, the director of the excavation, it is very probable that this tunnel symbolized the entry into the underworld and that the three unopened chambers contain the tombs of the Teotihuacan elite class. These last steps will not prove to be easy ones: The final part of the tunnel will have to be explored manually, since the intense humidity of this area has made it nearly impossible for the robots to keep on leading the way. ■



HÉCTOR MONTAÑO/INAH

**THE VARIETY** of the offerings unearthed in the tunnel beneath the temple has surprised the archaeologists working at the dig. Among the many pieces found are these anthropomorphic sculptures chiseled out of green stone (above), as well as beads, hair, pieces of jade, the fur and bones of big cats, and even the exoskeletons of beetles.

# Anne Boleyn: From Queen of England to the Scaffold

As ambitious as she was attractive, Anne Boleyn won the heart of Henry VIII. The king began a new religion to marry her, but failure to provide a male heir proved her undoing.

## Lover, Wife, and Traitor

1501

**Anne Boleyn** is born in Norfolk, the third child of Sir Thomas Boleyn, Earl of Wiltshire and Ormond, and Lady Elizabeth Howard. The exact date of her birth is unclear.

1526

After spending a few years in the court of Francis I of France, Anne Boleyn returns to England. Soon after she begins a relationship with King Henry VIII.

1533

**Anne secretly** marries Henry in January. The union is made official in May and a lavish coronation follows. In September Anne gives birth to a girl, the future Queen Elizabeth I.

1536

**Accused of adultery, incest, and high treason,** she is condemned to death. On May 19 she is beheaded at the Tower of London. Henry VIII remarries just eleven days later.

**A**s Anne Boleyn knelt before the king, he put a crimson velvet cloak around her and a gold crown on her head; he also gave her a thousand pounds a year “for the maintenance of her dignity.” On that September 1, 1532, Henry VIII had taken an unprecedented step: He had elevated a woman into England’s hereditary nobility. It was both a gift of love and compensation for enduring years of frustration while Henry tried to put an end to his marriage to Catherine of Aragon. Still with no divorce in sight the “virtuous” Anne had surrendered herself and finally agreed to be Henry’s lover.

The couple spent Christmas together at Greenwich Palace. Here they enjoyed such a splendid banquet that temporary kitchens had to be set up in the gardens. Not long after, Anne realized she was pregnant, tipped off in part by food cravings. Since they didn’t want the child to be born out of wedlock, and even though Henry was still married to Catherine, a chaplain wed them secretly in January of 1533. Who was this woman who had so captivated the despotic and learned Renaissance king?

Born in 1501, Anne Boleyn had excellent training, serving as a lady-in-waiting

to a French queen. In addition to courtly savoir faire and cultural refinement, she may have learned other, more dubious skills in the promiscuous courts of France. In 1533 Francis, the French king, told the Duke of Norfolk in confidence “how little virtuously Anne had always lived.” Henry VIII himself confessed to the Spanish ambassador, in 1536, that his wife had been “corrupted” in France and that he hadn’t discovered this until after they were married.

## A King at her Feet

What we do know for certain is that Anne quickly caught Henry’s eye when she returned to England in the early 1520s. She caused quite a stir: Beautiful and intelligent, she spoke French fluently and knew some Latin; she wore the latest continental fashions, and used her flair for dancing to show them off. Henry declared his love for her in 1526, but she refused to be his concubine: She knew “how quickly the king tired of those who had served him as his beloveds.” Anne had greater ambitions: A marriage that would make her queen. And so she flirted with the monarch, playing hard to get and keeping his passion ablaze while refusing to consummate their relationship. The letters the king wrote to her



After Anne’s execution Henry VIII would say that his wife had been “corrupted” in France.

HENRY VIII ON A GOLD COIN FROM 1520



## THE BOLEYNS: AMBITIOUS HEDONISTS

**THE BOLEYN FAMILY** were known as much for their political savvy as for their appetite for worldly pleasures. When Mary (Anne's older sister and a favorite lover of the French king Francis I) first shared Henry VIII's bed, her father, Sir Thomas Boleyn, knew how to exploit the situation for his own gain. But he profited even more from the rise of his daughter Anne, as she became one of the most influential people in the kingdom. George, Anne's brother, was known for his sexual exploits, and it was said that their mother, Lady Elizabeth Boleyn, had also been Henry VIII's lover in her youth.

**ANNE BOLEYN** IN AN IDEALIZED PORTRAIT MADE AFTER HER DEATH.

between 1527 and 1529 testify to the ardor she aroused in him, one, declaring: "Wishing myself in my sweetheart's arms ... I trust within a while to enjoy that which I have so longed for."

By 1529, Anne Boleyn was acting as if she were already queen. She sat in the queen's seat at banquets, wore splendid jewels and lavish gowns of purple, a color reserved for royalty. Anne's rise meant that Catherine of Aragon was increasingly marginalized; but that wasn't enough for Anne. On one occasion, after Henry had dined with Queen Catherine,

Anne angrily and openly complained about the agonizing delays in annulling or dissolving the royal marriage. Anne even insinuated that she would leave Henry and declared that she was wasting her youth "to no purpose." But the king's annulment was a complex matter of state which bitterly polarized political and religious opinion.

### A Lavish Coronation

Anne was absolutely committed to the cause of the Protestant Reformation which was attacking the long established

Catholic Church and the papacy. The Spanish ambassador described Anne as "more Lutheran than Luther himself," and she was instrumental in appointing the Protestant Thomas Cranmer to England's highest religious office, Archbishop of Canterbury.

In October 1532, Henry and Anne visited Francis I to secure his support for a marriage that was opposed by both Pope Clement VII and the powerful Catholic Emperor Charles V of Spain—Catherine's nephew. Anne triumphed completely: She wore a sumptuous gown



ART ARCHIVE

and the queen's jewels, literally torn from Catherine's clutches. In early 1533, after her secret wedding to Henry, Anne was queen in everything but name. Cranmer now proposed a radical way to legalize the situation. In April Parliament passed the first of the laws that would lead England to officially reject Catholicism and establish the Protestant Church of England. The Act in Restraint of Appeals deprived the pope of his authority to judge Henry's marital dispute. This meant that Catherine could no longer ap-

peal to Rome to overturn the decisions of England's religious authorities. On May 23, Archbishop Cranmer summoned an ecclesiastical tribunal that declared the king's union with Catherine null and void; five days later the wedding between Henry and Anne was confirmed to be valid and legitimate.

The coronation of Anne Boleyn was one of the most magnificent that London had witnessed. On May 31, dressed in clothes of gold and white ermine, Anne made her grand entrance into the capital and passed through the city in a procession that covered half a mile. The

triumphal arches and events organized in her honor praised the chastity of the new sovereign and expressed the hope that she would bear male heirs to the Tudor dynasty. Religion, art, and every aspect of courtly culture were used to exalt the image of the new queen. Meanwhile, Anne used her influence to promote well-educated and committed Protestants into important positions. She was rarely seen in public without a prayer book in her hands and she gave each of her ladies-in-waiting a small book of prayers, which they wore hanging from their belts.

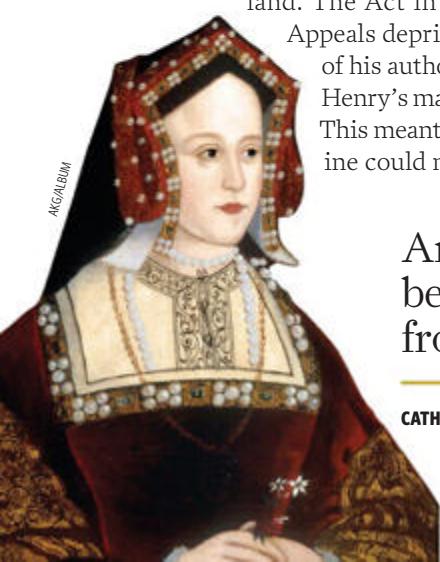
### Fall from Grace

In the summer of 1533 the pregnant Anne found out that Henry had taken a lover. This was a common royal practice at the time, but Anne condemned his behavior. A furious Henry told her that she had to "put up with it, as her betters had done before," warning that her downfall could

Anne wore the queen's jewels before being crowned, taking them from Queen Catherine of Aragon.

CATHERINE OF ARAGON, HENRY'S FIRST WIFE

AKG/ALBUM



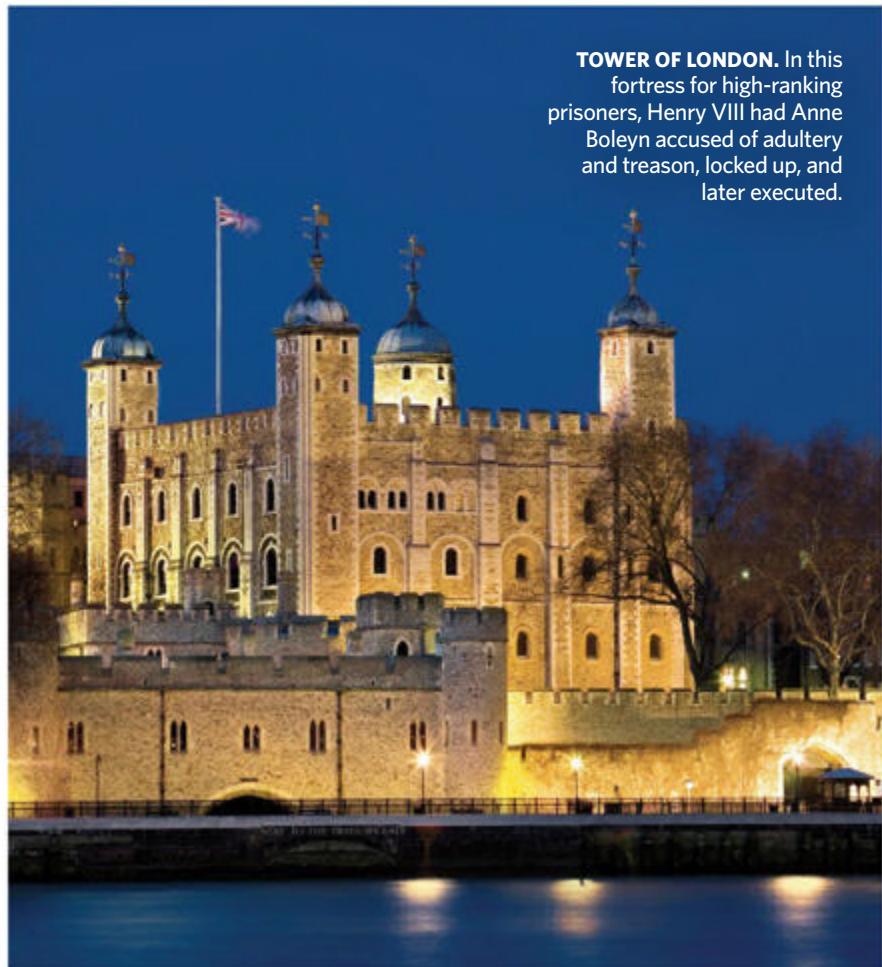
## A THRONE FOR HER DAUGHTER

**ELIZABETH I**, the only surviving child of Henry VIII and Anne Boleyn, became Queen of England in 1558, succeeding her half sister, Mary I. She was the last of the Tudor dynasty, she never married, and her 45-year reign was among the most prosperous in English history.



PRISMA ARCHIVO

ELIZABETH I, QUEEN OF ENGLAND. MINIATURE BY NICHOLAS HILLIARD, 16TH CENTURY.



CORBIS/CORDON PRESS

be as swift as her elevation. Their relationship suffered a further blow when she gave birth to a girl (the future Elizabeth I) instead of the boy Henry had so desperately hoped for. According to the Venetian ambassador, “the king is tired to satiety with his new queen.”

However, Henry had to put an end to any opposition to the royal marriage. In 1534 Parliament passed the Act of Supremacy, which proclaimed the king to be supreme head of the Church of England. This decisively cut the ties between Henry and the pope and granted succession to Princess Elizabeth instead of Mary, Catherine’s daughter. Resistance to this act was considered high treason, and the heads of its opponents, like Thomas More’s, would roll.

Anne then suffered a miscarriage and the pressure mounted. Henry, frustrated because Anne hadn’t given him a male heir, devoted himself to “dances and

women more than ever,” and was increasingly irritated by the queen’s complaints. In late 1535 he began a romance with Jane Seymour. The king’s flame of love for Anne had guttered and died; she became a political problem. Domestically Anne was unpopular, and internationally she was an obstacle to reestablishing ties with Emperor Charles. The solution lay with Henry’s chief minister, Thomas Cromwell.

On April 30, 1536, after Anne had suffered another miscarriage, Cromwell set a trap for her and presented the king with incontestable proof that the queen had seduced members of his privy council, including her own brother. What was more, Cromwell also accused Anne of plotting regicide, planning to murder Henry, marry one of her lovers, and rule as regent for her unborn child. Most historians consider as unfounded the 21 accusations of adultery brought against

**TOWER OF LONDON.** In this fortress for high-ranking prisoners, Henry VIII had Anne Boleyn accused of adultery and treason, locked up, and later executed.

Anne. It is unlikely that she conspired to kill the king, who was her primary protector and source of power. However, her frivolous reputation, her fondness for male company, and her indulgence with the games of courtly love made the monarch and many others believe her to be guilty. A trial presided over by her uncle, the Duke of Norfolk, and in which her own father took part, condemned her to death. Anne Boleyn was publicly beheaded at the Tower of London on May 19, 1536; Henry VIII waited only 11 days before marrying Jane Seymour. ■

ANTONIO FERNÁNDEZ LUZÓN

*Learn more*

BOOKS

*Love letters of Henry VIII to Anne Boleyn*  
Merchant Books, 2010.

*The Life and Death of Anne Boleyn*  
Eric Ives, Wiley-Blackwell, 2005.

# Aztec Healing: Medicine, Magic, and Prayer

Using a mix of science, superstition, and religion, the Aztec could look forward to much healthier and longer lives than most contemporary Europeans. The Spanish conquistadores gleaned a wealth of knowledge from Aztec healing practices.

**L**ife expectancy was limited in early modern Europe: Reaching the age of 70 without suffering any serious illness would have been an astonishing achievement. Yet it was a fairly unremarkable occurrence among the citizens of the great Aztec capital of Tenochtitlan, today's Mexico City. As the Spanish conquistadores embarked on the conquest of what is now Mexico, one of the things that surprised them most was the good health and longevity enjoyed by the inhabitants of the great Aztec Empire.

There were several immediate reasons as to why the Aztec could boast such good health. Their diet, consisting mainly of poultry, fish, cereals, fruit, and vegetables, would today be considered very cardio-healthy. High standards of personal

and household hygiene throughout the city were another contributing factor. What amazed the invaders most, however, was the knowledge and skill of Aztec physicians, whom the Spaniards admitted were better—and cheaper—than their European counterparts. “They have doctors skilled in the application of a wide variety of herbs and medicines,” wrote Fray Bernardino de Sahagún, who compiled the 16th-century study of Aztec life known as the Florentine Codex. “Some have experience of grave illnesses that Spaniards have long endured without hope, and which these doctors are able to cure.”

## Science and Shamanism

The Aztec applied their worldview to bodily health; magic, religion, and medicine were all linked for them with



## EXPERTS IN ANTIDOTES

**AS WELL AS USING** maguey and tobacco to treat snakebites, the Aztec also developed the technique of using the venom itself as an antidote. To extract it, the snakes were paralyzed using a special herb called *picietl*, then restrained.

**DIORITE RATTLESNAKE,** 16TH CENTURY



illnesses believed to be an imbalance in the vital force, or *tonalli* (hotness) of the body. Such misfortunes were blamed on breaking social taboos and were often attributed to the actions of gods or people who practiced black magic.

Yet their medical system was exemplary for the age. The Aztec had a range of doctors, allowing patients to select a specialist according to their ailment. The treatments included both spiritual and natural cures. Working alongside the more scientific doctors, or *tictli*, were the shamans and sorcerers, the *nahuallis*, who used magic and hallucinogenic plants. Meanwhile priests



**THE VICTIM** of a spider bite is massaged by doctors in this illustration from the Florentine Codex.

ART ARCHIVE

sought to cure people through a combination of prayer and penitence.

The *tictli* were organized into a wide array of specialties. For example, there were army surgeons, who owed their deep knowledge of anatomy to their lengthy study of sacrificial cadavers. They learned that to avoid infection the first step in treating a wound is to apply urine directly onto it as a sterilizing agent. They would then apply astringent herbs and a substance derived from eggs. To stop hemorrhages, the wound would be covered with coagulating herbs to help form scars, and, if necessary, stitched with human hair or attached with natural

"staples" made from the jaws of a particular ant. This innovative procedure was carried out by pulling together the edges of the wound, to which the live ant was applied. At the very moment the insect sunk its jaws into the skin, its head would be cut off, thus stapling the wound together. If a patient suffered during such a procedure, they might be given pain-killing herbs to chew.

### From Cradle to Grave

Bonesetters also played a role in Aztec medicine. Fractures were treated with splints and plaster casts or, in extreme cases, bone grafts: "The bone itself must

be scraped and smoothed, then a brand soaked in resin inserted deep into the marrow of the broken bone to make it rigid. The whole is then firmly bound up." They also had "cardiologists," whose study of study of human sacrifice victims allowed them to create a catalog of cardiovascular conditions. There were also doctors who we would today recognize as ear, nose, and throat specialists. What's more, thanks to their in-depth knowledge of plants and herbs, the Aztec excelled in treating digestive problems and skin conditions, even tackling cosmetic issues such as hair loss and dandruff.

Aztec opticians were skilled in treating what was termed the "overleafing of the eyes"—cataracts—"by cutting the membrane with a spike or thorn and putting in drops." The Aztec could also visit excellent dentists, who not only treated toothache and abscesses but also carried out complex cosmetic surgery. This included embedding gemstones such as turquoise into the teeth. Archaeological finds seem to suggest that having a gemstone smile was considered a mark of social distinction among the Aztec. Yet for all their knowledge of herbal remedies, the medical instruments used by Aztec physicians appear crude. Many were made of stone, though this does not seem to have made them any less effective.

### Madness and Motherhood

In addition to the doctors who treated these bodily ailments, people with more emotional or psychosomatic conditions were looked after by specialists called the *tetonaltih*. These doctors would often use dream interpretation to restore the patient's inner balance. Sometimes the symptoms were interpreted as signs of madness, which the Aztec categorized into several types. It is also thought that Aztec physicians recognized the symptoms of epilepsy and offered treatment for the condition. In certain codices and manuscripts the goddess *Tlazoltéotl* was represented as experiencing the symptoms of this illness.

The city also boasted no shortage

# Natural remedies: An Aztec cure for almost everything

**THE MEDICAL TREATMENTS** recorded in the Florentine Codex (1575-77) relate to a wide range of wounds and ailments, including fractures, bruises, and other types of lesions due to accidents. Treatments extended to infections, muscular afflictions, and internal disorders.



THOSE SUFFERING BLADDER CONDITIONS “must be injected with the powder ground from the root known as *cacamótic*.” A potion made from the tail of a creature known as *tlacuatzin* was also prescribed.



BONE FRACTURES WERE TREATED using powder ground from the roots of a plant, which was applied to the wound. The limb was then wrapped in a cloth and put in a splint.



BRUISES CAUSED BY BEATINGS were treated by the application of an antibiotic known as *popaualizpathi*. Afterwards, the patient would be bathed and given water mixed with the root *iztacpatl*.

of *cocaxcalli*: houses to care for the ill. “Montezuma had in his palace a place to care for the incurably and mentally ill, a hospice attached to the main temple. This was dedicated to the god Nanahuatl, and it was where lepers and albinos and others were cared for.” These also used quarantine as a form of preventive medicine.

Women, the source of future warriors, enjoyed excellent preventative medicine during pregnancy and labor. Children were cared for by the *atlan tlachixqui*, an

Aztec pediatrician. These had a curious method of diagnosis that involved observing the reflection of the child’s face in a basin of water. Indeed, shamans would diagnose illnesses using the intervention of sacred objects, trying to expel the evil spirits thought to be a cause of sickness.

## Medicinal Plants

The Aztec are likewise notable for their encyclopedic knowledge of medicinal plants. Curative herbs and remedies were known to be distributed in “pharmacies where prepared syrups, ointments and dressings could be bought.” The

*papiani-panamacani* who worked in these establishments not only sold the medicines but also used their experience to advise their customers.

One remedy in high demand was an antidote against snakebites, crucial given that Mexico has a huge variety of venomous snakes. The Aztec made their remedy with tobacco and maguey, and the Spanish themselves testified to its effectiveness. Another popular herbal remedy was the *cacaloxochitl* plant, highly esteemed for its antistress properties. This was especially popular among the Aztec ruling elite, who used it in the form of aromatherapy, while enjoying a massage in a *temazcal*, or steam bath.

## Smart Sanitation

A relatively high standard of public and private hygiene was another decisive factor in Aztec longevity. Thanks to the writings of the conquistadores Hernán

The *tetonaltih* specialized in illnesses of the spirit, whose workings were attributed to the goddess Tlazoltéotl.

GODDESS TLAZOLTEOTL, HUASTEC PERIOD (900-1521)





FOR A STIFF NECK, the Aztec prescribed bathing and pressure applied to the neck. In serious cases, a poultice of plants was used, along with a drink of water mixed with *coaxtuitl*.



IN CASES OF PATIENTS SUFFERING CHEST PAINS following a blow to that area of the body, "they would drink still warm urine, mixed with the ground bodies of three or four lizards."



INFUSIONS WOULD BE RECOMMENDED for patients with feverish symptoms. They would also use infusions to cure or soothe other afflictions like insomnia or stomach cramps.



FOR THE "BUBO" AFFLICTION —syphilis—water was mixed with the herb *tietlémaitl* and powdered *tialquequéztal* or copper filings. The patient was then placed in a *temazcal* (steam bath).

IMAGES: ART ARCHIVE

Cortés and Bernal Díaz del Castillo, we not only have in-depth understanding of the merits of Aztec medicine but also of their hygiene habits. These were markedly better than those of contemporary Europeans.

The order and cleanliness of Tenochtitlan stood in stark contrast to the filth of the Spaniards' home cities. For example, the Aztec capital boasted an excellent system for distributing drinking water, with not one, but two sets of pipes. While one set of pipes was in use, the other was being maintained so as to keep both in a constant state of cleanliness. This included the innovative use of *axolotls*, ten-inch-long amphibians, which were placed in the pipe and would eat any impurities, leaving the water clean. When Hernán Cortés surrounded and besieged Tenochtitlan, he broke the water pipes to deprive the citizens of running water. When the city was rebuilt after the conquest, only

one of these sets of pipes was repaired. As a result, waterborne illnesses spread through the population with an unprecedented severity.

The palaces of Tenochtitlan were constructed with private latrines connected to a system of running water. The public also had access to toilet facilities, which were distributed throughout the city and even along the roads leading to it. The Aztec had developed the habit of recycling their organic waste, which was either taken out of the city in containers to be burned, or spread on the surrounding fields as manure.

Houses were built according to standardized ventilation regulations and might be equipped with steam baths. Such concern for cleanliness not only dominated civic culture but also informed every stage of Aztec life across the whole of society. Citizens were accustomed to taking baths every day and

using soap made from the fruit of the *copalxocotl*. From their earliest years Aztec children were taught the importance of personal grooming, including attention to their teeth and their clothes. Young couples were instructed that personal and household cleanliness would lead not only to a long union but also to a very happy one. ■

ISABEL BUENO

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# The Battle for South Africa

In 1795 Britain seized the strategic Dutch colony of Cape Town, on the southern tip of Africa. In the following decades the British expanded and consolidated their colonial possessions. Through diplomacy and military force they asserted their authority over Dutch settlers and native Africans, claiming lands rich in raw materials, gold, and diamonds. But in 1879 the British seriously underestimated the power and determination of one of their adversaries: the Zulu.

“**W**hy do the white people start at nothing? Why does the governor of Natal speak to me about my laws? Do I go to Natal and dictate to him about his laws?”

This was the response of Cetshwayo, king of the Zulu, to demands by the British authorities that he dissolve his fearsome army. The British claimed that Cetshwayo had committed acts of cruelty against his own people and against the

Europeans, but the real reason behind their hostility was different. As Britain steadily occupied all of southern Africa, they couldn’t tolerate the threat posed by the powerful warrior empire of the Zulu.

Britain piled on the pressure and at the end of 1878 the British High Commissioner gave the Zulu an ultimatum, but some British troops didn’t even wait for it to expire. On January 6, 1879, Lord Chelmsford, commander of British forces in South Africa, invaded Zululand with 17,000 men. This army was mostly Brit-

ish veterans, with a sizable contingent of African and European auxiliary troops from the Natal region. The army divided into three columns, which planned to converge on the Zulu capital, Ulundi, in what they thought would be a cakewalk. Indeed, the first clash with the Zulu, at Nyezane, seemed to confirm that it would be an uneven match. Armed with cannon, Gatling machine guns, and efficient Martini-Henry rifles (with their formidable bayonets), and supported by cavalry, there could be no doubt that the British



BRIDGEMAN/INDEX

## FIGHTING FOR SURVIVAL

**THE GREAT TREK** of the Boers, former Dutch colonists, from the Cape Town region toward eastern South Africa in the 1840s, soured relations with the native Africans. Mostly devoted to stockbreeding, the Boers seized large tracts of land; in Natal, 20,000 colonists monopolized 80 percent of the land while 300,000 natives were left with the remainder. The British Empire protected the Boer interests, sparking battles with Africans over their rights.

weaponry was devastatingly superior. By contrast the Zulu wielded their traditional weapons: the *iklwa*, a spear with a short shaft and a long blade, practically a sword, as well as clubs, axes, javelins, and large shields. They also had a number of rifles, but they were the older, flintlock models. The Zulu's military strength lay in their ability to mobilize large armies, thousands and even tens of thousands strong. They deployed an offensive strategy created by Shaka, the king who founded the Zulu Empire in the early 19th century. It was called the "bull horn"

formation: While the center or "chest" attacked, the "horns" on the flanks would advance and envelop the enemy to defeat them in hand-to-hand combat.

On January 20 the column with which Chelmsford was traveling reached a part of Zululand called Isandlwana. It wasn't a difficult position to defend, but after a superficial survey of the territory, Chelmsford decided not to fortify it with ditches or parapets. This breach of military protocol was based on his assumption that they would only spend one day there and that there were only small groups of Zulu in the area. It was his first mistake, and it wasn't long before Lord Chelms-

ford made his second. When he found out that a British exploratory force had come across the enemy, he wrongly assumed that they were being attacked by the bulk of the Zulu army. Chelmsford left Isandlwana and went to their aid with some 2,500 reinforcements.

### A Major British Defeat

Meanwhile, unbeknownst to the British, the extremely capable Zulu general Ntshingwayo was running a large Zulu army toward Isandlwana. Here Lt. Col. Henry Pulleine had been left in command of 1,700 troops, including 900 African auxiliaries. Shortly after Chelmsford's departure, the British heard a clamor that sounded "like a train" and to their horror suddenly found the plain before them filled with Zulu regiments, a total of some 20,000 men. The Zulu warriors wasted no time in attacking the British camp under the rallying cry of "Kill the white men!" Even so, the British commanders

The Zulu's military strength lay in their ability to mobilize large armies of warriors.

WOODEN ZULU VESSEL WITH LID AND THREE LEGS, 20TH CENTURY

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**CHURCH** erected at Rorke's Drift, with a reconstruction of the stone cattle kraal in the foreground.

A. VAN ZANDBERGEN/ACI

were convinced that their accurate rifles, artillery, and rockets could repel any attack by the Africans. But their confidence faded as overwhelming Zulu attacks stretched their defensive line too thin and problems with the supply of ammunition weakened their firepower. The British were only able to hold out for a few hours. By nightfall there wasn't a single defender left in Isandlwana: Those

who hadn't run away had been killed.

When Chelmsford's troops returned at the end of the day, they found a devastating panorama: "The dead lay everywhere ... Two combatants lay close together: the Zulu with a bayonet thrust through his skull; the white man, a spear plunged into his chest. It was the same all over the field." British losses numbered 1,329 soldiers: 858 Europeans and

471 local auxiliary troops. The British lost 52 officers, four more than in the Battle of Waterloo. Only 60 Europeans escaped with their lives. But despite their victory, the Zulu didn't fare much better: According to some estimates, as many as 3,000 warriors died, victims of rifle fire and, at the last, disciplined and desperate use of the bayonet.

More was to come. On the afternoon of January 22 there was another clash, about six miles to the west of Isandlwana. Rorke's Drift was a British defensive post in the Natal Colony, on the border with Zululand. Anxious to repeat their success at Isandlwana, one of Cetshwayo's commanders, Dabulamanzi, crossed the border with his army and surrounded the garrison. Around 4,000 Zulu faced a contingent of just 140

EILEEN TWEEDY/ART ARCHIVE

## FEARSOME WARRIOR

**THE ZULU TRIBE EMERGED** as a military power in the early 19th century, under the leadership of Shaka, who expanded the dominance of his small ethnic group (originally only 2,000 men) over the eastern part of what is now South Africa. Shaka established a strict military education, often compared to that of the Spartans.

ZULU WARRIOR OF KING MPANDE, GEORGE F. ANGAS, 19TH CENTURY



**OIL PAINTING** of the British garrison at Rorke's Drift resisting Zulu attacks on January 22, 1879. It was thought that news of the disaster at Isandlwana would provoke mass desertion, but the British kept their calm, organized a defensive stronghold, and used superior firepower to their advantage.



### ① Parapet

Made up of wagons, flour sacks, and biscuit boxes, it was crucial in repelling the Zulu attacks.

### ② Lt. Chard

Despite his limited combat experience he was able to maintain discipline and coordinate the troops.

### ③ Fire

In the evening, the house-hospital burned down. The British managed to rescue the wounded.

### ④ Rifles

A Martini-Henry rifle could fire a deadly 450-570 caliber bullet every five seconds if needed.

### ⑤ Ammunition

It was essential to resupply the soldiers when the 70 bullets held in their cartridge pouches ran out.

BRIDGEMAN/INDEX

Europeans, abandoned to their fate by the desertion of a detachment of native soldiers. It is believed that the Zulu may have armed themselves with over a hundred Martini-Henry rifles, taken from the British at Isandlwana. The Zulu occupied a nearby hill overlooking Rorke's Drift and began firing down into the defensive compound. But unlike at Isandlwana, this time the British had fortified their position as well as they could. A wall of wagons, flour sacks, and biscuit boxes was built to connect the site's stone structures into a continuous defensive line behind which the British soldiers could fight. Over the following 12 hours they managed to repel successive Zulu attacks. Despite their bravery and determination the Zulu were exhausted from a lack of provisions during the previous three days. At 4 a.m. on the 23rd, after losing about 500 warriors, the Zulu re-treated. Astonishingly there were on-

ly 15 British deaths, most of them from bullet wounds. Eleven of the survivors were awarded the Victoria Cross, Britain's highest military decoration. This was partly a political move to "exorcise" the defeat at Isandlwana.

### The Zulu Empire Subdued

When Cetshwayo was informed of his losses he lamented, "A spear has been thrust into the belly of the Zulu nation." The king understood that his brave warriors had borne the brunt of the battles. Despite the Zulu losses, the conquest was no easy task for the British. They lost 79 men at Ntombi, defeated by a renegade Swazi prince fighting for the Zulu. Days later another 200 British soldiers died in a clash at Hlobane. And a few months later Eugene Louis Napoleon, a grand nephew of Napoleon Bonaparte, was killed while fighting as a volunteer in the British Army. But by now the British military ma-

chine was laying down the law. In Kham-  
bula, on March 29, the Zulu lost 2,000  
men, and a few days later at Gingindlovu  
another thousand fell. In the war's final  
battle, at Ulundi on July 4, 1879, the Zu-  
lu were barely able to hold out for half  
an hour; they suffered 1,000 casualties  
for just ten European deaths. The next  
month King Cetshwayo was captured,  
and the Zulu Empire was partitioned be-  
tween the British and their African allies.  
In 1882 a limited Zulu monarchy was re-  
stored with Cetshwayo as king. He died  
in 1884 and his grave remains a sacred  
site to the modern Zulu. ■

CARLO CARANCI

### Learn more

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*British Infantryman Versus Zulu Warrior:*

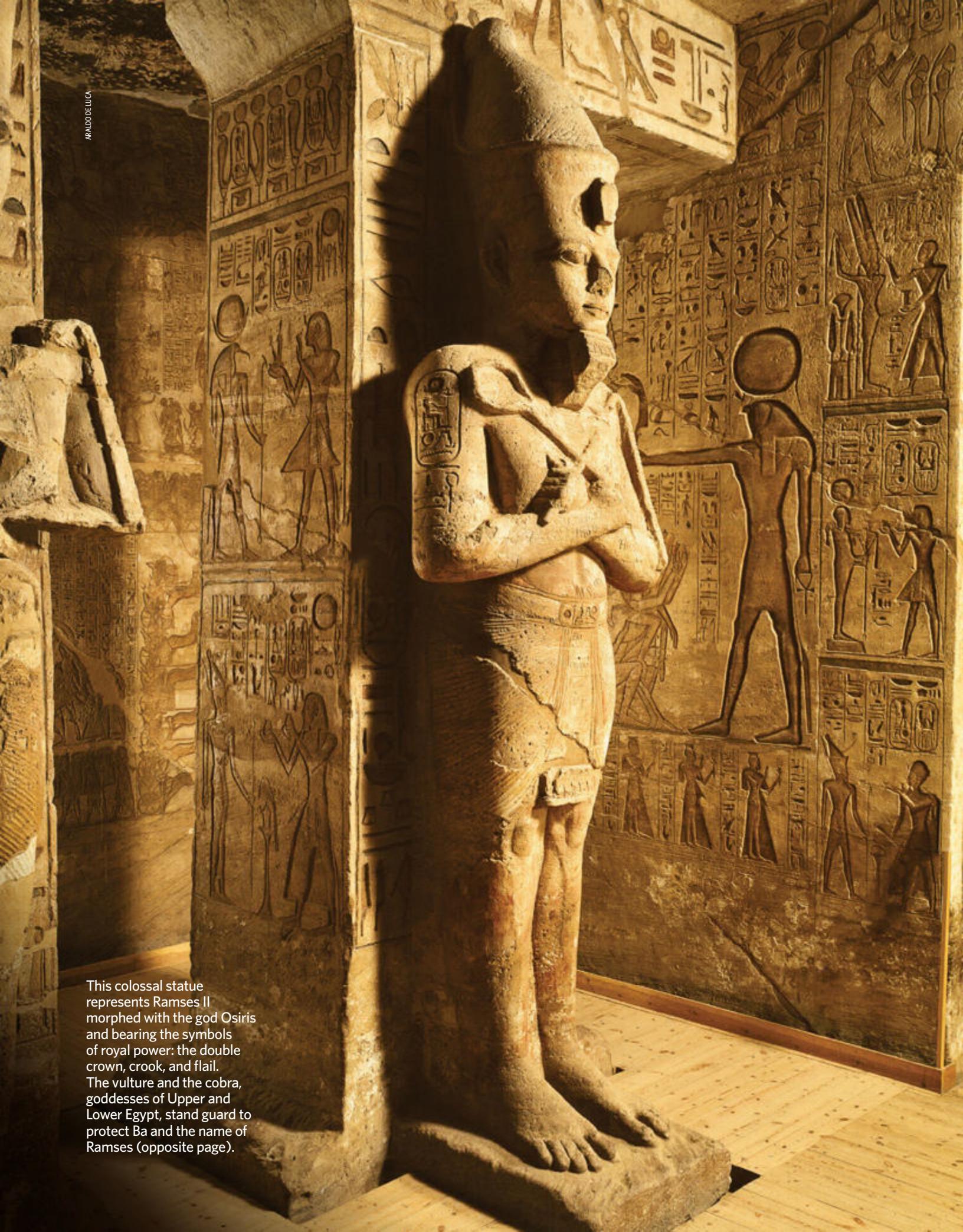
*Anglo-Zulu War 1879*

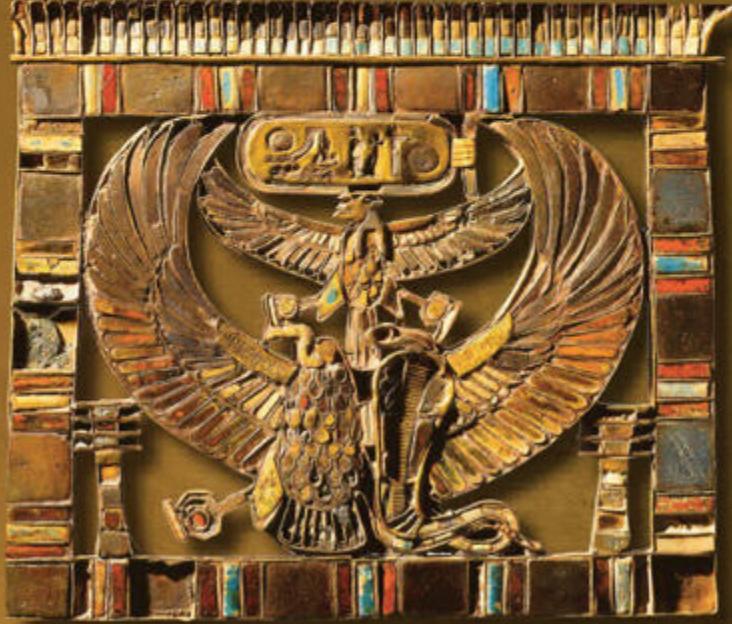
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This colossal statue represents Ramses II morphed with the god Osiris and bearing the symbols of royal power: the double crown, crook, and flail. The vulture and the cobra, goddesses of Upper and Lower Egypt, stand guard to protect Ba and the name of Ramses (opposite page).





ART ARCHIVE

# RAMSES II

Following the death of his father, Ramses' transition to pharaoh was marked by a mystical and intricate coronation ritual, launching a 66-year reign.



### LEGENDARY QUEEN NEFERTARI

The Great Royal Wife of Ramses, married to him before he became king, makes an offering to the god Ptah (left).

### THE TEMPLE OF LUXOR BY THE RIVER NILE

Ramses II ordered the building of the pylon, the two obelisks, and their colossal flanking statues.



**A**s dawn broke in ancient Thebes, you could feel the tension on the city's streets. Since the death of King Seti I, Egypt was mired in uncertainty. The priests were being particularly diligent in their duties, messengers had raced off to every corner of the kingdom spreading the unhappy news. People across Egypt would hear a booming voice proclaim the year, month, season, and day, before announcing: "The God Men-Maat-Ra [Seti I] has risen to his horizon; the king has ascended to the sky; he has joined the solar disk; he has merged with his creator." The atmosphere at court was one of sad silence and deep distress. But there was also hope. Prince Ramses, the heir to the throne,

had assumed his duties well. He was conscientiously fulfilling the rites that would ensure the immortality of the late sovereign, he who had governed with an iron hand to deliver the peace and order that Egypt's gods and people required.

### Looming Danger

Seti I's body was in the experienced hands of the embalmers. They would open for him the doors to immortality, since mummification allowed the monarch to be reborn as Osiris, the God of the Afterlife. Meanwhile, Seti's son Ramses would soon assume the Egyptian throne as the new incarnation on Earth of the god Horus, son of Osiris. Everything needed for a smooth transition had already been carefully preplanned.



#### FAVORED BY THE GODS



1279 B.C.

**RAMSES** becomes pharaoh after the death of his father. Thus begins one of the longest and most prosperous reigns in the history of ancient Egypt.



1249 B.C.

**AFTER THREE** decades in power, the 56-year-old pharaoh celebrates his first jubilee in his magnificent new capital, Pi-Ramses.



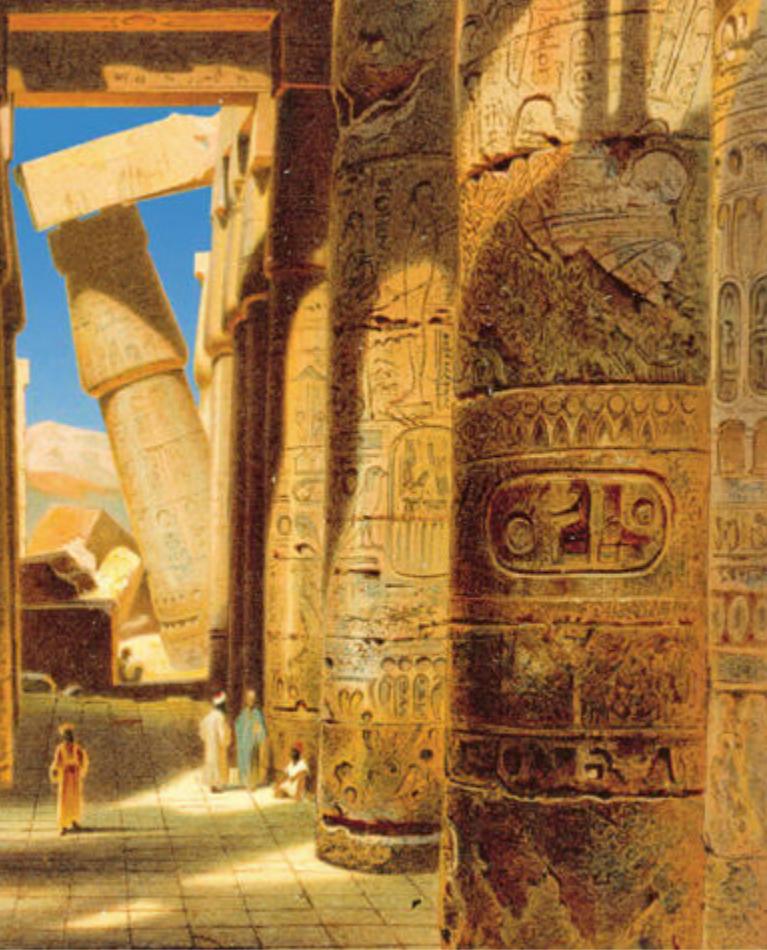
1213 B.C.

**IN THE 66TH YEAR** of his reign Ramses celebrates his 14th and last Sed, the festival celebrating his rule. The pharaoh dies at age 92.



1212 B.C.

MERNEPTAH, son of Ramses, was over 60 when he finally ascended to the throne; he was the oldest son to have outlived his father.



### HYPOSTYLE HALL OF KARNAK

Behind the second pylon in the temple of Amun in Karnak lies this hall, with 134 columns, which was completed by Ramses II.

But no amount of ritual could hide the fact that Seti's death had brought a change in the cosmic order, known as *maat*. The country was thus weakened and vulnerable to hostile forces. These dangers ranged from physical attacks by Egypt's enemies to crises in the form of plagues, famines, and other misfortunes, any of which could plunge the country into chaos. And although the future pharaoh had completed all the necessary rites to ensure that his father would keep his appointment with eternity, it was only once Ramses' crucial coronation ceremony was complete that the *maat* would be restored.

### The Coronation

Noblemen, priests, and gods would meticulously prepare the coronation that would legitimize the new monarch's rule. Few Egyptian texts describe this crucial ceremony, perhaps because it was so powerfully magical in nature that it had to remain secret. But what descriptions we do have paint a fascinating picture. For example, we know that there was no single set site for coronations; each pharaoh would choose a coronation site based on its special religious or political significance: Thebes, Memphis, Heliopolis, Sais. The preferred date for a coronation seems

to be the first day of the new year or the first day of the season of *peret* (the sowing season, from November to March). The rites, all taking place in a temple, would begin at dawn and would last at least five full days.

The ceremony began with a ritual bath designed to purify the future king. Amid hymns and praise, two priests, one wearing the falcon mask of Horus and the other the Ibis mask of Thoth, carried out a "baptism" by pouring water from the Nile, the source of life, on the pharaoh to purify him of his human imperfections. Afterward, they anointed the new king with seven sacred oils that would protect him from evil and connect him with magical elements. The festival perfume, sacred oil, resin, nekhensem oil, tewat oil, cedar oil, and Libyan oil, all came from the primeval land that Egyptians believed gave rise to the world. There was a double purpose to this ceremony: the pharaoh's purification and anointing not only gave birth to a new, divine, and powerful Ramses as ruler of Egypt, but it also bound the pharaoh to the very origins of the world and the cosmos.

The coronation continued with a ritual race around a wall or an area set by boundary stones. This evoked the white wall that surrounded



# THE KING'S POWER

Ramses left many representations of himself to future generations. In them he appears with the gods, who confer upon him the power he uses to destroy Egypt's enemies and put an end to chaos.



## ETERNAL REIGN

The pharaoh had this coronation scene sculpted in his temple at Abu Simbel. The monarch **1**, wearing a blue Khepresh crown **2**, is kneeling before the sun god Re **3**, with his falcon head and solar disk. The god holds a palm frond **4**, which symbolizes the endless number of years that Ramses will rule, and the emblem **5** of the infinite Sed-s that he will celebrate. To the left appears the god Thoth **6**, with his Ibis head, crescent moon, and lunar disk, who acts as a divine scribe and records on the Persea tree **7** the titles and names of the pharaoh, and the everlasting years of his reign.



## THE PROTECTOR OF EGYPT

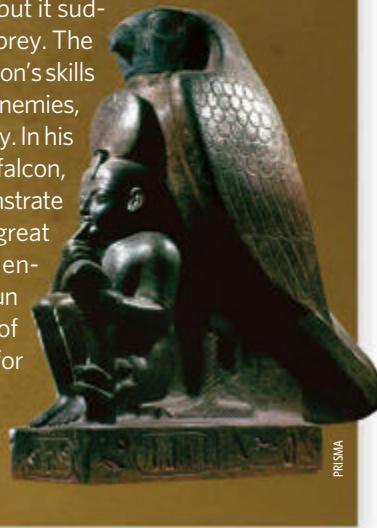
In another scene, the king wears a white crown **1** inserted inside a red crown **2**. Together they form the double crown, which symbolizes the king's power and rule over all of Egypt. The uraeus, the stylized cobra emblematic of divine authority **3**, protects him from all danger. From his linen kilt hangs a long bull's tail **4**, both a symbol of the king's potency and a protective element. The pharaohs adorned themselves with jewelry, particularly necklaces **5** that were both decorative and served as amulets. In his right hand the monarch brandishes a club **6**, with which he destroys the enemies of his country **7**.



# THE FALCON KING: QUICK, ACCURATE, AND LETHAL

CERTAIN ANIMALS were considered manifestations of Egyptian royalty. Among them is the falcon, a bird that embodied the god Horus, son of the ruler of the underworld, Osiris; Osiris was the emblem of the deceased pharaoh, whereas Horus represented the living king. The falcon flies majestically at a great height but it suddenly dives toward the earth when it spots its prey. The Egyptians established a parallel between the falcon's skills and those of the king, who pounced on Egypt's enemies, attacking them just as the falcon did with its prey. In his temples, Ramses reproduced the image of the falcon, both to show his devotion to Horus and to demonstrate his particularly close ties with the god. In the great temple of Abu Simbel Horus dominates the entrance and accompanies Ramses, Ptah, and Amun in the sculptural group in the most sacred part of the sanctuary, an area that is only illuminated for a few moments every year.

THE GOD HORUS, IN FALCON FORM, PROTECTS RAMSES II AS A CHILD. GRANITE STATUE, 19TH DYNASTY



Memphis, the first capital of Egypt, and symbolized the territory that pharaoh was to govern. With this rite, the new monarch established his control over the country and granted it his protection.

Since the sovereign had been born into a new existence, he had to be given new names. Like every Egyptian child, he had been given a name at birth. But pharaohs adopted four names, preceded by titles that tied them to divine concepts. These names had to be recorded in the Persea tree, an act linked directly with destiny. According to Egyptian myth, the Persea grew in the sky where the gods lived, suggesting that while the coronation was taking place on Earth, there was also a celestial coronation taking place with the approval of the gods. The highly important naming ceremony was performed in the privacy of the temple, far from prying eyes. According to mythology, there were three divinities who would inscribe the names: Atum, the creator god, and Thoth and Seshat, the god and goddess of writing. Two priests and a priestess may, for that particular moment, have been transformed into living representations of the gods on Earth. After receiving his names the prince had to be nourished by a

mother's milk, just like any newborn. The future king drank milk that came symbolically from the breast of a maternal goddess, a drink that would endow him with divine qualities. This goddess could be Isis or one of her associated divinities, such as Nekhbet, Weret-hekau, Mut, or Hathor.

## Ruler of a Dual Country

It was essential that the coronation rites were fulfilled twice, once as the king of Upper Egypt (the area to the south of Memphis) and the other as the ruler of Lower Egypt (the country that extended to the north of Memphis). As he sat on a platform, Ramses was invested with the royal crowns, perhaps offered by the gods Horus, representing the north, and Seth, representing the south. In one example, the coronation ceremony of Queen Hatshepsut, the crowns were placed on her head in the following order: first, the *nemes* headcloth; next, the ceremonial headdress called a *kheperesh*; then the *ibes* wig; and then, one after the other, the red crown, the white crown (the *atef*), the Amun crown with feathers, ram's horns, and solar disk, and the Crown of Atum. The red, the white, and the double crowns were

## ABU SIMBEL TEMPLE

Erected in Nubia, four colossal seated statues of Ramses II preside over the temple's facade, dedicated to the sun god Re-Horakhty and to the deified pharaoh himself.







SYLVAIN GRANDADAM/AGE FOTOSTOCK

## THE TEMPLE OF WADI ES-SEBUA

Built in Nubia between the 35th and 50th years of Ramses' reign, this temple dedicated to Amun, the king of Gods, shows the pharaoh represented as a living god.

the most important and were granted to the new monarch by the god Atum, represented by a masked priest. As the ruler of the North, pharaoh accepted the white crown, protected by the cobra goddess Wadjet, in the Per-ur chapel, "the great house." As the ruler of the South, pharaoh received the red crown or *hedjet* in the Per-neser chapel, "the flame house," associated with the vulture goddess Nekhbet. We know that both these crowns were used from 4000 B.C. and that they also had other, nonpolitical, connotations: the red embodied the life force of the female, and the white, that of the male.

The joining of the red and white crowns gave rise to the *pschent*, the double crown that from 3000 B.C. was used to symbolize the pharaoh's rule over a unified Egypt. The Egyptians called it *sekhemti*, the "two powerful ones." Depending on whether a pharaoh wanted to highlight his role as the sovereign of Upper or Lower Egypt, the red or white crown would be placed on top of the other.

This double crown was tied to the king's earthly power, whereas the atef crown was associated with the afterlife, as the crown of Osiris. Another part of the king's headdress was the

nemes. This was a piece of fabric that covered the head, falling on both sides of the face and tied at the back. It originally had a practical use in holding down the hair and keeping it clean and free of sand; but later it became a symbol identifying and connecting the monarch with divine forces.

## The Scepters of Power

Having received his crowns, Ramses now received his scepters. The *nekhakha* flail may originally have been used by nomads to lead livestock. It was then adopted as a symbol of power and authority, becoming a magical guide for governing men. Similarly, the *heka* crook was once a practical tool for a shepherd, although it has also been suggested that it may have been an ancient hunting weapon, later adopted by herding communities and acquiring a protective function. The *heka* was one of the most important and powerful scepters of all those found in Egypt, and it appears in private burials as a sort of amulet, a symbol of royal protection.

The coronation involved many more complex rites and rituals, during which the pharaoh presented himself to the gods (who attended the ceremony through their statues) to gain their acceptance. Pharaoh also made a wide range of



# THE NAMES OF THE PHARAOH

Adding to the name they received at birth, Egyptian kings adopted a further four names when taking the throne. Each name related to gods in Egypt's pantheon and had its own symbolic importance.

## BIRTH NAME



Son of Re,  
Sa Ra

beget by Re, beloved of Amun  
Ra-mes-su      mery-Amun

**AFTER THE TITLE** Son of Re (or Ra), a cartouche contained the pharaoh's birth name (nomen), given to him by his mother. Each king adopted the praenomen as a religious name on his accession to the throne. .

## THRONE NAME



The Sedge and the Bee,  
Nesut bity

Powerful is Re's justice, chosen by Re  
User-Maat-Re      Setep-en-re

**THE EMBLEMS** of Upper Egypt, the sedge , and Lower Egypt, the bee , designated the pharaoh as the king of both lands. In the cartouche we read the king's name at coronation, where it was usual to invoke the god Re .

## HORUS NAME



Horus,  
Hor

powerful bull, beloved of Maat  
Ka-najt      mery-Maat

**THE PHARAOH** associated himself with Horus , the falcon, lord of the sky, who appears atop a serekh (facade). Beside it are two of Ramses' names, one of them the principle of justice, Maat .

## "TWO LADIES" NAME



The two ladies,  
Nebyt

protector of Kemet, victor over foreigners  
Mek-Kemet      uaf-jasut

**THE VULTURE GODDESS** Nekhbet and the cobra goddess, Wadjet , were both symbols of Upper and Lower Egypt, the king's realm. Ramses' name makes reference to Kemet, literally "the black land" of the Nile Valley.

## GOLDEN HORUS NAME



Golden Horus,  
Hornub

rich in years, great in victories  
User-renput      aa-nehku

**THE ROYAL TITLE** identifies the pharaoh with the falcon, Horus, atop the hieroglyph for gold , a sign that his body was incorruptible. Ramses' names praised his longevity and his military power.



# AN ETERNALLY YOUNG AND DYNAMIC KING

**THE CORONATION CEREMONY** had continuity in the Sed festival, the jubilee that marked 30 years in power (a generation), and which was then repeated at more frequent intervals, every three or four years. With this ancient celebration, the sovereign's strength, worn down by the passage of the years, would be refreshed through magical rituals that guaranteed him a full and powerful rule. It was preceded by a series of rites that had not been performed in the coronation but that complemented its symbolism. Since Sed was shrouded in mystery, few details are known. Due to his long reign, Ramses II celebrated 14 Sed festivals, the first of which took place on the 29th year after his ascension to the throne.

**SENUSET I BEFORE AMUN-MIN.** RELIEF ON THE WHITE CHAPEL AT KARNAK, CELEBRATING THE KING'S JUBILEE



SCALA/FIRENZE

offerings, released birds, and shot an arrow to each of the four cardinal points to cast out evil and make the cosmos aware of his ascension as the new king.

## Acclaimed by his People

This was the glorious moment when the monarch revealed himself to his subjects. Here, at the public part of the ceremony, incense was burned and offerings of oxen and desert animals were made, while dignitaries sang hymns in honor of the "lord of grace, rich in attentions." They proclaimed that "his people love him more than they love themselves, they are more pleased with him than with the gods; men ignore their wives when singing his praises. He is the king, victorious since infancy, he has been headed down this path since his birth. He advances those born with him. He is a divine gift."

Once the coronation rites had finally ended, messengers headed to the outer reaches of the kingdom to proclaim the names and titles of the new monarch, which from that point on had to be included in documents. Traveling south, past Aswan, they told the Viceroy of Kush (Nubia): "His majesty has appeared as the king of Egypt on the throne of Horus of the living,

without his like forever." They informed him that "the house of the king is prosperous and flourishing" and end their message with a date: "Year 1, third month of the season of shemu, day 27, day of the official appearance ceremony," meaning the coronation.

Ramses II was now the Pharaoh of Egypt. He had an arduous task ahead of him, since—just like his predecessors—he would have to act as governing power, as high priest of all the temples, as strategist, and as soldier. His many years acting as his father's co-regent had prepared him for these onerous but important functions. He would devote himself to these roles enthusiastically, relegating his private life to the background in order to fulfill them. The 66-year reign of Ramses II, one of the longest in the civilization's history, would be dedicated to improving Egypt. ■

ELISA CASTEL

CASTEL IS AN EGYPTOLOGIST AND HAS WRITTEN ABOUT ANCIENT EGYPTIAN PRIESTS, SIGNS, AND SYMBOLS.

*Learn more*

### BOOKS

**Ramesses: Egypt's Greatest Pharaoh**  
Joyce Tyldesley, Penguin, 2001.

**Ramesses II**  
T.G.H. James, White Star Publishers, 2002.

**Ramesses II: An Illustrated Biography**  
Christiane Desroches Noblecourt, Flammarion, 2008.



Written in both Aramaic and Hebrew, the Qumran manuscripts, like the one shown here, have undergone a long, painstaking, and costly process of restoration and translation since they were found in 1946.

Around A.D. 70 Qumran was attacked by the Roman army during the First Jewish-Roman War. The Romans also destroyed the Second Temple of Jerusalem, as depicted on the coin below minted by Bar Kokhba.



# THE HIDDEN JEWISH ARCHIVES THE DEAD SEA SCROLLS

In 1946 the chance discovery by three young shepherds of a few battered scrolls in a cave sparked a search that would uncover over a thousand ancient manuscripts in the Judaean desert. The Dead Sea Scrolls formed the religious library of an apocalyptic Jewish sect awaiting the end of the world at the time of Christ.



**T**he world still has priceless historical treasures waiting to be discovered. Finding them often takes skill, perseverance, and luck. It can also take time. Around A.D. 796, the Bishop of Seleucia noted the discovery of some manuscripts in a cave near the Dead Sea. Despite additional reports by other medieval scholars, it would take nearly two thousand years, a minor miracle, and a lot of haggling before these precious documents finally saw the light of day. Then, between 1946 and 1956, around 15,000 fragments of some 900 ancient scrolls were discovered in 11 caves close to the ruins of Qumran, an archaeological site in the Judaean desert on the western shore of the Dead Sea. Conspicuous among them were hundreds of manuscripts written in Hebrew and Aramaic.

This unique find, commonly known as the Dead Sea Scrolls, has been called the greatest documentary discovery of modern time. It certainly caused a stir among scholars of ancient Judaism, as they included many texts that had never been seen before. Dating from between 250 B.C. and A.D. 50, these voluminous writings promised to shed new light on Judaism at a crucial phase of its development, when both Christianity and the Jewish religion as practiced today were emerging. Their historical value was unquestionable: but identifying them and their authors is something else. Who wrote the Dead Sea Scrolls?

## The Sons of Light

In the winter of 1946–47 three Bedouin shepherds chanced upon seven manuscripts near Qumran, in what is now called Cave 1. Unbeknownst to them they had discovered an extraordinary collection of writings that outlined the beliefs of a religious sect whose members held that all events were predetermined by God.

They claimed that God had divided mankind into two opposing groups: the “Sons of Light” and the “Sons of Darkness.” These forces battled for supremacy until the final triumph of the “Sons of Light.” This victory was supposed to herald the coming of two messiahs, one celestial and the

**175 B.C.**  
**THE SELEUCIDS,**  
(Greek heirs to  
Alexander the  
Great) enforce  
Greek customs  
and culture in  
Israel. Jewish  
discontent grows.

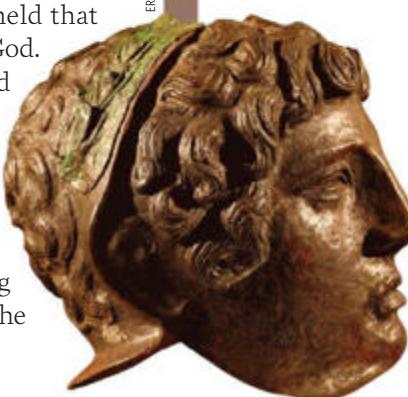
**167 B.C.**  
**THE HOLY TEMPLE**  
of Jerusalem is  
desecrated by the  
Seleucids. The  
Jewish Maccabee  
family incites  
a revolt with  
religious support.

**164 B.C.**  
**WORSHIP** in  
the Temple of  
Jerusalem is  
restored with the  
removal of Greek  
statues. The Jews  
regain their  
religious freedom.

**152 B.C.**  
**THE MACCABEES**  
proclaim  
themselves high  
priests of the  
Temple, but some  
Essene priests  
reject their right to  
this most holy role.

**80 B.C.**  
**A GROUP** of  
Essenes retreats  
to the desert, near  
the western shore  
of the Dead Sea,  
and establishes  
a community  
at Qumran.

ERICH LESSING/ALBUM



other ecclesiastical. The sect also believed that the apocalypse was imminent and that it was their duty to rigorously observe the divine laws laid down in the Ten Commandments given to Moses on Mount Sinai. In preparation they devoted themselves to prayer and the study of sacred books to help keep them on the path of righteousness. This sect believed itself the embodiment of the true Israel, its priests the true priests of Israel.

## Bibles, Apocalypse, and Treasure

Between 1952 and 1956 many more manuscripts were found in ten other caves. Some had been properly rolled, wrapped in linen and placed in pottery jars, much like the manuscripts found in Cave 1. However, most, especially those from Cave 4, were in such poor and fragmented condition that restoring them would involve enormous time, effort, and care.

But it would be worth it. The manuscripts were an unprecedented find and included writings on a remarkably diverse range of subjects. There were numerous copies of almost every book of the Hebrew Bible, as well as voluminous commentaries and interpretations of biblical works, including the Pentateuch—the first five books of the Bible (Genesis, Exodus, Leviticus, Numbers, and Deuteronomy), and the books of the prophets of Israel, like Isaiah and Habakkuk.

But remarkably the manuscripts also contained several apocalyptic texts that don’t appear in the Hebrew Bible, like the First Book of Enoch. These works reflect on the origin of evil and include apocalyptic visions of the end of time. They describe the God of Israel coming to judge those who have broken his law, purifying the Earth and leading Israel to victory over its enemies.

Also found were a series of manuscripts about the liturgical calendar and how it relates to astronomical cycles, as well as collections of hymns, beatitudes, blessings, and even curses. Finally there is a mysterious Copper Scroll. This may be purely symbolic, but it describes a list of Temple treasures and their

**ORNAMENTAL  
ROMAN HELMET,**  
FOUND IN JUDAEA,  
ISRAEL MUSEUM,  
JERUSALEM

# The Rise and Fall of the Qumran Community

hiding places, though none have been located yet. Alongside these holy books were texts listing the rules and laws by which members of the sect were expected to live. There were guidelines for prayers, ritual ablutions and purifications, diet, sexual relations, and a range of other daily activities. There were also notes on the penalties and punishments to be dealt out for transgressions. Study of these texts has suggested that the sect was governed by a community council with a leader at its head. The community members, both priests and laity, lived in various camps. Some, like Qumran, were in the desert, and may have been reserved for celibate men. Others were in cities and included families of men, women, and children. New members of the sect underwent a long period of religious instruction and had to donate all their property to the community.

## The Essenes Community

Who was this community that had amassed and seemingly abandoned this huge wealth of literature? There was no shortage of suggestions. Jewish sects like the Pharisees, the Sadducees, and the Zealots were all proposed; so too were the first Jewish Christians, with references to the “Messiah of Aaron and Israel” (interpreted as being John the Baptist) and the “Teacher of Righteousness” being Jesus. However, paleographic analysis of the scrolls has ruled out this attractive idea. Another early theory was that the manuscripts may have originated in the Temple of Jerusalem itself, although the texts’ criticism of the Temple priests and the notion that the sect had substituted the Temple in its duties makes this unlikely.

Today the most widely held theory is that the Dead Sea Scrolls were written and collected by the Essenes, a Jewish sect that thrived from around the second century B.C. to the end of the first century A.D. The Essenes name comes from the Hebrew *osei ha-tora*, meaning “those who do the Torah,” and the sect is mentioned by various ancient authors such as Philo, Josephus, and Pliny the Elder: their descriptions of the Essenes match those of the “Sons of Light” portrayed in the scrolls.

Generally these Greco-Roman authors consider that the Essenes were based on the shores of the

The ruins of Qumran lay in clear view for centuries and attracted the attention of many travelers. But it wasn’t until 1951 that Father Roland de Vaux (director of the French Biblical and Archaeological School of Jerusalem) and Gerald Lankester Harding (director of the Department of Antiquities in Jordan) started the scientific exploration of the site. De Vaux came up with the first scientific chronology for the site. Based on coins

and other remains, de Vaux tacked by the Roman army of dated construction of the the Emperor Vespasian, on its buildings around 134 B.C. way to suppress a Jewish revolt He further surmised that the in Jerusalem. many ritual baths discovered Today it is believed that Qumran was established later than implied a community focused on the need for purification: He de Vaux thought, more toward identified this community as 80 B.C., and that it was abandoned for a shorter time after the Essenes. This first settlement was probably destroyed the earthquake. It has also by an earthquake in 31 B.C. The been suggested that Qumran Essenes returned to Qumran wasn’t finally destroyed until under Herod Archelaus (4 B.C. -A.D. 6), and lived there until A.D. 73, in the expedition that A.D. 68, when the area was at also destroyed the last great Jewish stronghold of Masada.



THE RUINS AT QUMRAN. STEPS LEAD TO A WATER RESERVOIR IN THE FOREGROUND

The inhabitants of Qumran lived in tents and *caves* nearby, using the buildings as centers for meetings and *study*.

Dead Sea. However, Jewish authors refer to Esseneism as a movement that spread over the whole of Israel. Both schools of thought are consistent with the geography described in the manuscripts: The Essenes established several different communities, including some in the desert. Indeed, archaeology has proved the connection between Qumran and other contemporary sites farther south, like Ein Feshka and Ein el-Guweir.

### What was Qumran?

The 260-by-330-foot site at Qumran is unusual, not least because few of its many rooms appear to be living quarters. It's been suggested that it may have been a recreational center or a trading post but this is unlikely as there is no proven trade route nearby. And yet Qumran's architecture is undoubtedly different from that of other villages in the area. Also uncharacteristic is its cemetery, where individuals have been buried in single graves rather than in family tombs, as was the usual Jewish practice of the period. Significantly, chemical analysis of pottery found in the caves and in the ruins has confirmed that the two sites are connected and were used by the same people. It suggests that the Qumran community probably lived in the caves or nearby tents and used the buildings as a center for meetings and study.

However the Qumran community could not have written all the manuscripts found there. Some of the scrolls date back to the third century B.C., whereas Qumran was almost certainly first inhabited around 80 B.C., and no earlier than mid-second century B.C. The later date is based on finds of coins from that period, although such coins continued to be used for decades after they were minted.

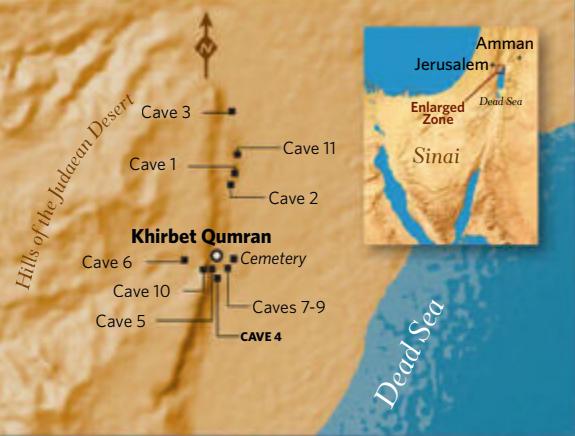
In fact, in the mid-1980s it was proposed that the Qumran community was not a center of mainstream Essene culture, but a breakaway group of Essenes dissidents. Essenism was an influential religious movement that emerged after the dramatic and turbulent events in Israel during the mid-second century B.C. At this time the Seleucid dynasty, which ruled Alexander the Great's eastern empire, forcibly imposed Greek culture on the



DONALDNAUSBAUM/GETTY IMAGES

## BURIED TREASURE

**THE CLAY LOAM HILLS** around Qumran have been eroded over time. The eleven caves that hid and preserved the treasured manuscripts are scattered across the steep cliff faces of these slopes: Cave 4 is very near the archaeological site at Qumran, whereas Cave 1 is nearly a mile away. The inhabitants of Qumran widened and modified several of these caves, including Cave 4. It was here that, starting in 1946, Bedouins discovered more than 15,000 fragments of manuscripts.



CARTOGRAPHY: EDGGS



The *Essenes* settled in the desert near the Dead Sea, where they hoped to find the freedom to live in accordance with their *beliefs*.

Jews. They massacred all those who resisted and even plundered the Temple in Jerusalem. After some years, a Jewish family, the Maccabees, led a revolt against the Seleucids, restoring traditional Jewish religious practices centered on the Temple. But the Maccabees appointed themselves as the Temple's high priests, angering some Essene priests who believed that this honored position could only be held by those of ancient priestly lineage. This spurred the Essenes to separate from the rest of the Jewish community.

### The Encampment of the Ascetics

This "dissident" theory is largely based on an interpretation of the Rule of the Community document found in Cave 1 as being the founding statement of a breakaway community. But subsequent studies of other copies of the Rule of the Community document found in Cave 4, some dating to before Qumran was settled, show that the desert community produced almost no new rules to differentiate itself from mainstream Essenism, probably based in Jerusalem, and maintained their beliefs unchanged. More likely, the people who made up the Qumran community simply set out for the desert, believing that here they would be free to lead their lives in complete accordance with their beliefs. This theory fits with the first-century A.D. writings of Josephus. He describes two "orders" in the Essene movement; both shared similar cultures but one practiced greater asceticism than the other. It certainly sounds plausible that Qumran was one of these more devout Essene communities, but we still have much to learn. Since 2011 international scholars have enjoyed unrestricted access to the Dead Sea Scrolls; they will doubtless continue to reveal more about the community that owned them, with probably a few surprises in store. ■

CARLOS A. SEGOVIA

SEGOVIA IS A HISTORIAN OF SECOND TEMPLE JUDAISM, EARLY CHRISTIANITY, AND FORMATIVE ISLAM.

[Learn more](#)

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*The Complete Dead Sea Scrolls in English*  
Penguin Classics, 2012.

*The Story of the Scrolls: The Miraculous Discovery and True Significance of the Dead Sea Scrolls*  
Geza Vermes, Penguin, 2010.



DUBY TAL/AGE FOTOSTOCK

## LIVING IN THE DESERT

**WATER WAS THE LIFELOOD OF QUMRAN.** It was brought in through an aqueduct [1] and distributed throughout the complex by a series of channels and reservoirs [2]. Water probably played an important religious role in purification, as suggested by the abundant ritual baths [3]. Some of the identified spaces in the complex include a tower [4], a kitchen [5], an assembly room for meetings [6], a possible scriptorium or study [7], a laundry destroyed by the 31 b.c. earthquake [8], and a pottery workshop with a kiln [9].

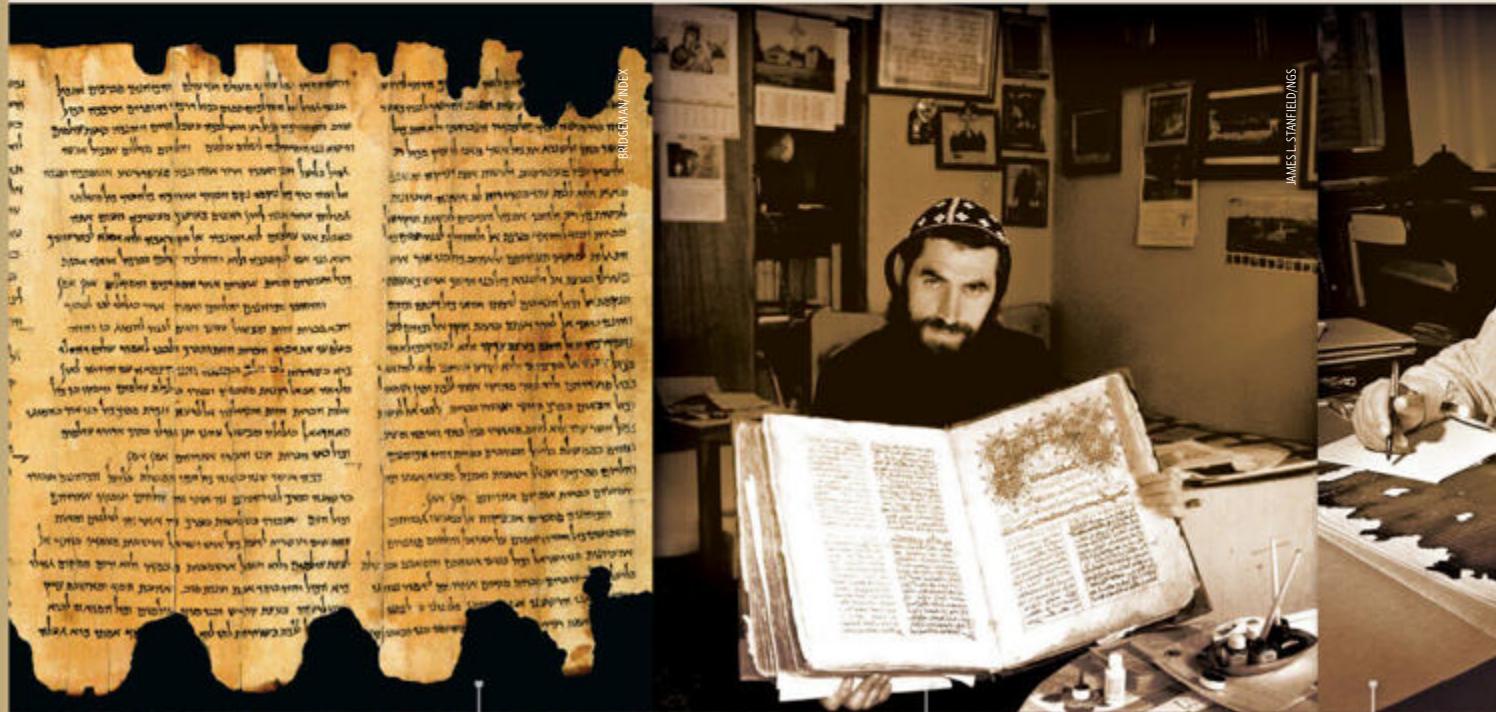


SCIENCE PHOTO LIBRARY/AGE FOTOSTOCK



# TIME LINE OF THE DISCOVERY OF

The story of the Dead Sea Scrolls begins with a chance discovery by a shepherd and



## 1 EDH-DHIB, THE BEDOUIN SHEPHERD

**IN NOVEMBER OR DECEMBER 1946**, three young Arab Bedouins were grazing their goats and sheep in an area to the northwest of the Dead Sea. One shepherd noticed two holes in a cliff face and threw a stone into one of them. He then heard a noise, perhaps the cracking of a clay pot. A few days later the youngest of the shepherds, Edh-Dhib, returned and climbed into the cave. He found ten or twelve long pots against the walls. Only two contained anything: one was full of red earth; and out of the other, he pulled two packages wrapped in cloth and an unwrapped leather scroll. The largest scroll may have been the Great Isaiah Scroll, and the smaller ones, the Habakkuk Commentary and the Rule of the Community.

**THE RULE OF THE COMMUNITY**, ONE OF THE MANUSCRIPTS THE SHEPHERD EDH-DHIB FOUND AND REMOVED FROM CAVE 1.

## 2 SAMUEL, THE SYRIAN PRIEST

**TO SELL THE MANUSCRIPTS**, the Bedouins approached an antiquities dealer in Bethlehem named Kando. Meanwhile the scrolls were entrusted to a member of the Syrian Orthodox Church. He was curious about their contents, and in April 1947 he took them to his superior, Athanasius Yeshue Samuel. Samuel retained part of the Rule of the Community to study. Meanwhile, the Bedouins found four more scrolls in the cave. One, the Genesis Apocryphon, was left with Kando, and the other three scrolls were sold to another dealer, Faidi Salahi. In July Samuel bought the Genesis Apocryphon, the Great Isaiah Scroll, the Habakkuk Commentary, and the Rule of the Community for 24 Jordanian pounds (at the time, U.S. \$96).

**ONE OF THE WORKS** ENTRUSTED TO THE LIBRARY OF THE MONASTERY OF SAINT MARK.

## 3 SUKENIK, THE ARCHAEOLOGIST

**AN INTERMEDIARY** offered the three manuscripts held by Faidi Salahi (who, like Kando, lived in Bethlehem) to Eleazar Lipa Sukenik, an archaeologist at the Hebrew University of Jerusalem. On November 25 they met in Jerusalem at the Jaffa Gate. Communicating through the barbed wire barricade that separated the Jewish and Arab areas of the city, Sukenik examined a piece of leather with Hebrew characters that reminded him of those used on first-century ossuaries. He borrowed the manuscripts and copied some of them. In December Sukenik learned of the scrolls bought by Samuel and went to view them for himself. Sukenik offered to buy them but didn't offer enough; Samuel was sure they were worth more.

**SUKENIK**, A PROFESSOR, WAS THE FIRST PERSON TO REALIZE THE IMPORTANCE OF THE MANUSCRIPTS.

**"The Four Dead Sea Scrolls"**

Biblical Manuscripts dating back to at least 200 BC, are for sale. This would be an ideal gift to an educational or religious institution by an individual or group.

Box F 206, The Wall Street Journal.

# THE DEAD SEA SCROLLS

ends seven years later with an astonishing ad in a New York newspaper.



## TREVER, THE AMERICAN

**ATHANASIUS YESHUE SAMUEL** now possessed four manuscripts, but did not know their age, contents, or significance. On February 18, he decided to ask for help. He sent a message to John Trever at the American School of Oriental Research (ASOR). He said that while cataloging the monastery library he had found some scrolls written in Hebrew and could Trever help identify them. Trever realized their antiquity, recognized some lines from the Book of Isaiah, and took photos of the manuscripts. He was finally told the truth: that they been found by Bedouin shepherds near Qumran. ASOR informed the Department of Antiquities in Jordan and reached an agreement with Samuel in order to publish its findings on the scrolls in his possession.

ONE OF THE TWO FULL POTS DISCOVERED BY THE YOUNG SHEPHERD EDH-DHB WHEN HE EXPLORER CAVE 1.

## DE VAUX AND HARDING, EXPERTS

**IN APRIL ASOR** issued a statement about the significance of the four manuscripts; Sukenik issued another statement saying that he had three more manuscripts and that they had all been found in a cave. A Jordanian official located the cave on January 28, 1949. Under Jordanian military protection the site was excavated between February and March. This involved the Jordanian Department of Antiquities, the French Biblical and Archaeological School of Jerusalem and the Palestine Archaeological Museum. The excavation was directed by Gerald Lankester Harding and Roland de Vaux. The research team found around 600 more manuscript fragments, as well as 40 cloths used to wrap the scrolls and the lids to the jars that held them.

G. L. HARDING, HEAD OF THE DEPARTMENT OF ANTIQUITIES IN JORDAN, UNDER WHOSE JURISDICTION CAVE 1 FELL AT THE TIME

## YADIN, THE MAN WHO READ THE AD

**IN 1949 ATHANASIUS YESHUE SAMUEL** went to America to sell the Great Isaiah Scroll, the Habakkuk Commentary, the Rule of the Community, and the Genesis Apocryphon. On June 1, 1954, he placed an advertisement in the *Wall Street Journal*: "The Four Dead Sea Scrolls' Biblical Manuscripts dating back to at least 200 BC, are for sale. This would be an ideal gift to an educational or religious institution by an individual or group." The advertisement was spotted by Yigael Yadin, Sukenik's son. On July 1 he bought the lot for U.S. \$250,000, provided by philanthropist David Samuel Gottesman. Today the State of Israel is the owner of the seven manuscripts, which are displayed in the Gottesman-funded Shrine of the Book.

YIGAEL YADIN, THE ARCHAEOLOGIST WHO PURCHASED THE MANUSCRIPTS FOR ISRAEL, EXCAVATING AT QUMRAN CIRCA 1953

When German archaeologist Robert Koldewey unearthed the magnificent Ishtar Gate, now on display in the Pergamon Museum, Berlin, it was so impressive he believed that it was somehow related to the legendary Hanging Gardens of Babylon.





# THE SEVEN WONDERS

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In listing the Seven Wonders of the World, the ancient Greeks nominated the era's most awe-inspiring architectural feats. Only one survives today.

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## THE PYRAMIDS OF GIZA

The pharaohs of the 4th dynasty built their tombs in Giza—Menkaure, Khafre (center), and Khufu—the only one of the Seven Wonders still standing.



The ancient Greeks loved lists. They enjoyed categorizing, quantifying, and rating things into an appreciable hierarchy—the original “top ten.” It’s a fascination that has passed effortlessly through the ages and has now reached its apogee with the Internet, where you can find every conceivable subject graded according to individual or popular opinion.

Naturally such lists are almost entirely subjective, a fact which only enhances their appeal with the prospect of a lively debate about each item’s relative worth. And so it was with arguably the greatest list of all time, the Seven Wonders of the Ancient World.

In the fourth century B.C. Alexander the Great conquered the lands where civilization had flourished in antiquity: Persia, Egypt, and Babylon. This gave the Greeks the opportunity to compare the monuments they found abroad with those they had at home—contact with civilizations even older than their own encouraged a passion for collecting antiques and studying old literary texts. As the first great cultural institutions were founded, including the Great Library of Alexandria, people became keen to preserve everything they deemed worthy of being collected. They did so by creating an inventory of knowledge that could be passed down to posterity.

And so it was that a list of the most extraordinary human creations came into being. The first known copy of the Seven Wonders dates from the second century B.C., in a papyrus known as the *Laterculi Alexandrini*. Around this same time Antipater of Sidon is credited with creating a list of Seven Wonders similar to the one we know today. Over the next centuries the list changed many times, following the whims of fashion and

politics; its evolution was perhaps inevitable, almost intrinsic to its nature. But eventually there emerged an “established” list of Seven Wonders.

That some wonders only graced the Earth for a tantalizingly short time heightened even further their halo of mystery. It is only through scholarly and often fanciful re-creations that we can still visualize these legendary monuments. Today, the surviving wonder, the Pyramid of Giza, acts as the benchmark against which we inevitably measure all the Seven Wonders. That the pyramids still inspire awe is testament to their greatness, a validation of their place on that prestigious list. That the ancient Greeks considered the other six monuments to be of equal or even greater magnificence explains why this most famous of lists still fires our imagination. ■

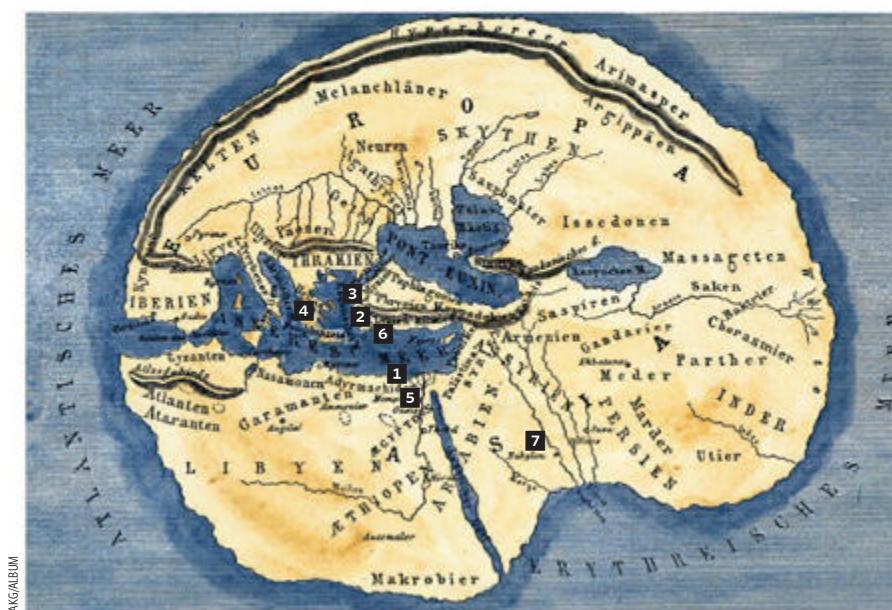
DAVID HERNÁNDEZ DE LA FUENTE

HERNÁNDEZ DE LA FUENTE IS AN AWARD-WINNING NOVELIST AND A HISTORIAN OF CLASSICAL LITERATURE, ANCIENT MYTHOLOGY, AND GREEK CIVILIZATION.



### HERODOTUS OF HALICARNASSUS

This famous historian, who lived in the fifth century B.C., was one of the first writers to mention the Seven Wonders.



### THE LOCATIONS OF THE SEVEN WONDERS

This map of the Earth according to Herodotus, published by Wilhelm Wägner in 1867, shows the known world at the time of the Greek historian and the locations of the Seven Wonders: 1 the Lighthouse of Alexandria; 2 the Mausoleum at Halicarnassus; 3 the Temple of Artemis at Ephesus; 4 the Statue of Zeus at Olympia; 5 the Great Pyramid of Giza; 6 the Colossus of Rhodes; 7 the Hanging Gardens of Babylonia.

# 1. THE LIGHTHOUSE OF ALEXANDRIA

**IN 331 B.C.** Alexander the Great founded Alexandria, the new capital of Egypt, on a bay on the shores of the Nile Delta. Ptolemy I, Alexander's successor, decided to build a lighthouse on the coastal island of Pharos to guide passing ships. Designed by Sostratus of Cnidus, it had a square base, 98 feet on each side, and several levels, each decorated with bronze statues that reflected sunlight in the day. The lighthouse reached the remarkable height of almost 400 feet; today's tallest lighthouse stands at 436 feet. The structure was so famous that the name of its island (Pharos) became synonymous with "lighthouse" in Latin languages.



THE LIGHTHOUSE OF ALEXANDRIA IS SHOWN ON THIS SILVER TETRADRACHM (ANCIENT GREEK COIN), MINTED IN THE SECOND CENTURY A.D.



## Centuries of Light

The lighthouse was one of the longest surviving wonders. It appears, for example, in the *Tabula Peutingeriana* (above), a map from the 4th century A.D. An earthquake toppled it in the 14th century, and the Sultan of Egypt reused its rubble to build a fort on the base on which the lighthouse had once stood.

ARTIST'S IMPRESSION OF THE LIGHTHOUSE OF ALEXANDRIA, ON THE ISLAND OF PHAROS. THIS MONUMENTAL EDIFICE WAS FINISHED AROUND 280 B.C. BY THE SECOND RULER OF THE PTOLEMAIC GREEK DYNASTY OF EGYPTIAN RULERS.

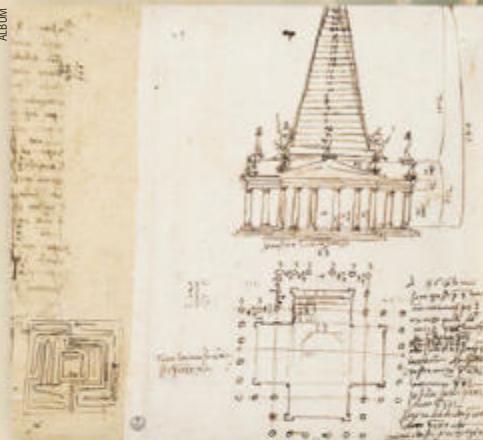


## 2. THE MAUSOLEUM AT HALICARNASSUS IN ASIA MINOR



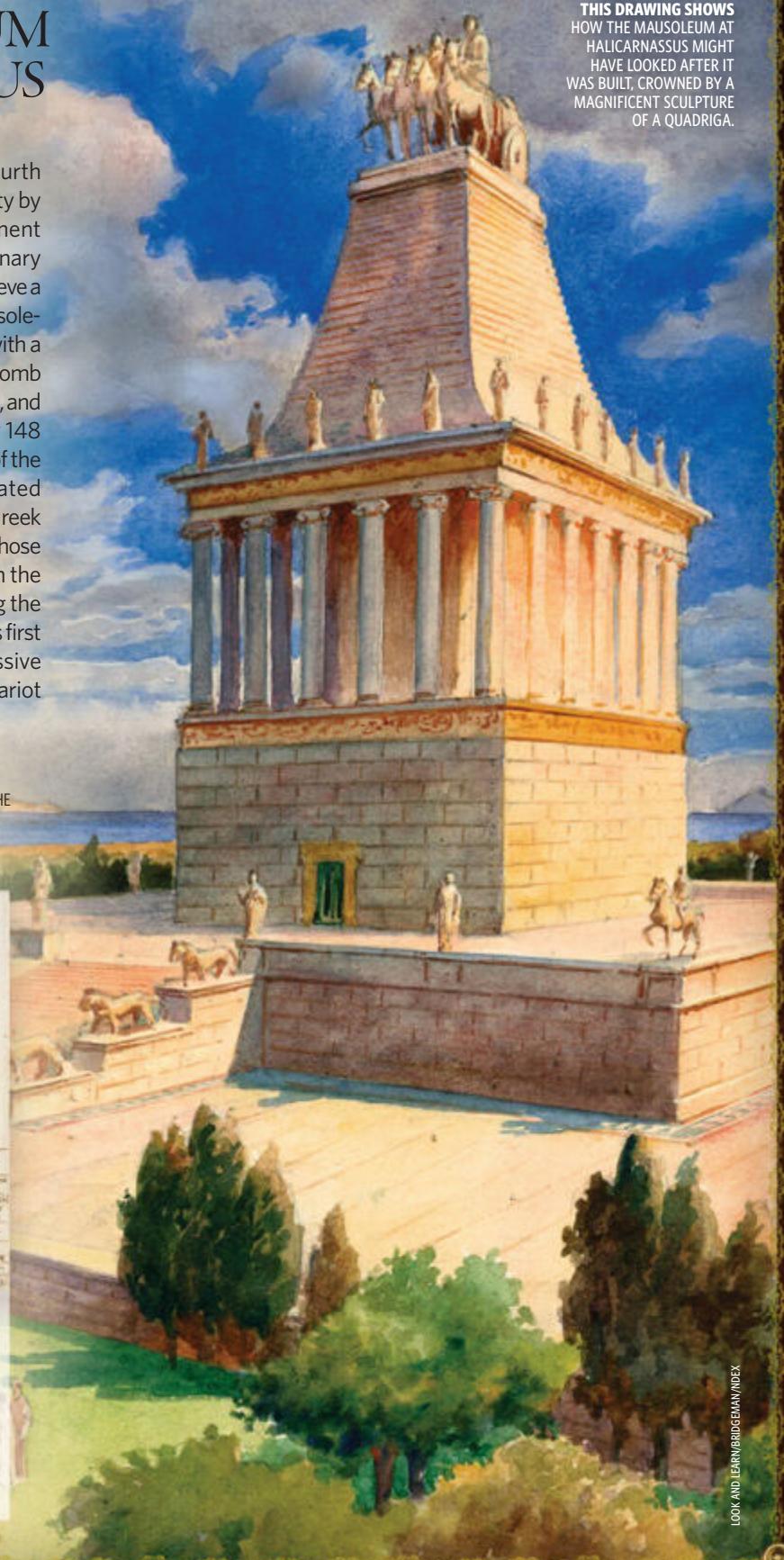
**MAUSOLUS**, the ruler of Caria in the fourth century B.C., hoped to attain immortality by building a vast funerary monument for his eternal rest. The dictionary proves that he did indeed achieve a degree of immortality: "mausoleum" is still synonymous with a stately resting place. The tomb took 20 years to complete, and it stood at approximately 148 feet high. The four levels of the monument were decorated with reliefs by renowned Greek sculptors such as Scopas, whose friezes can be seen today in the British Museum. Crowning the pyramid-shaped roof of this first mausoleum was the impressive sculpture of a quadriga, a chariot pulled by four horses.

A STATUE OF MAUSOLUS, ONE OF THE FEW SURVIVING ELEMENTS OF THE MAUSOLEUM AT HALICARNASSUS.



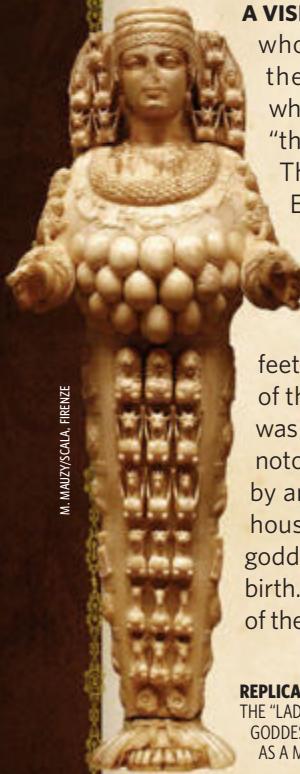
### A Lasting Legacy

The mausoleum survived in quite good condition until the 14th century, when a quake destroyed it. The Knights of St. John of Jerusalem used its stone to reinforce their fortress in 1522. But its influence continued, and it is featured in architectural drawings, such as this one from the 16th century.



THIS DRAWING SHOWS HOW THE MAUSOLEUM AT HALICARNASSUS MIGHT HAVE LOOKED AFTER IT WAS BUILT, CROWNED BY A MAGNIFICENT SCULPTURE OF A QUADRIGA.

### 3. THE TEMPLE OF ARTEMIS AT EPHESUS



M. MAUZY/SCALA, FIRENZE

**A VISITOR** in the second century B.C., who claimed to have seen five of the seven wonders, stated that when he saw the temple of Artemis "the others were put in the shade." The first temple was erected in Ephesus (Turkey) by King Croesus of Lydia in the 6th century B.C. It was a magnificent building constructed entirely of marble, with 127 columns, each over 60 feet tall, and a 6 1/2-foot-tall statue of the goddess. This first sanctuary was destroyed by an arsonist seeking notoriety. It was ultimately replaced by another of vast dimensions that housed the renowned statue of the goddess Artemis, protector of childbirth. It is this later temple that is one of the Seven Wonders.

**REPLICA OF THE STATUE OF ARTEMIS OF EPHESUS.** THE "LADY OF EPHESUS," IDENTIFIED WITH THE PHRYGIAN GODDESS CYBELE, SHE WAS WORSHIPPED IN THE CITY AS A MOTHER GODDESS..

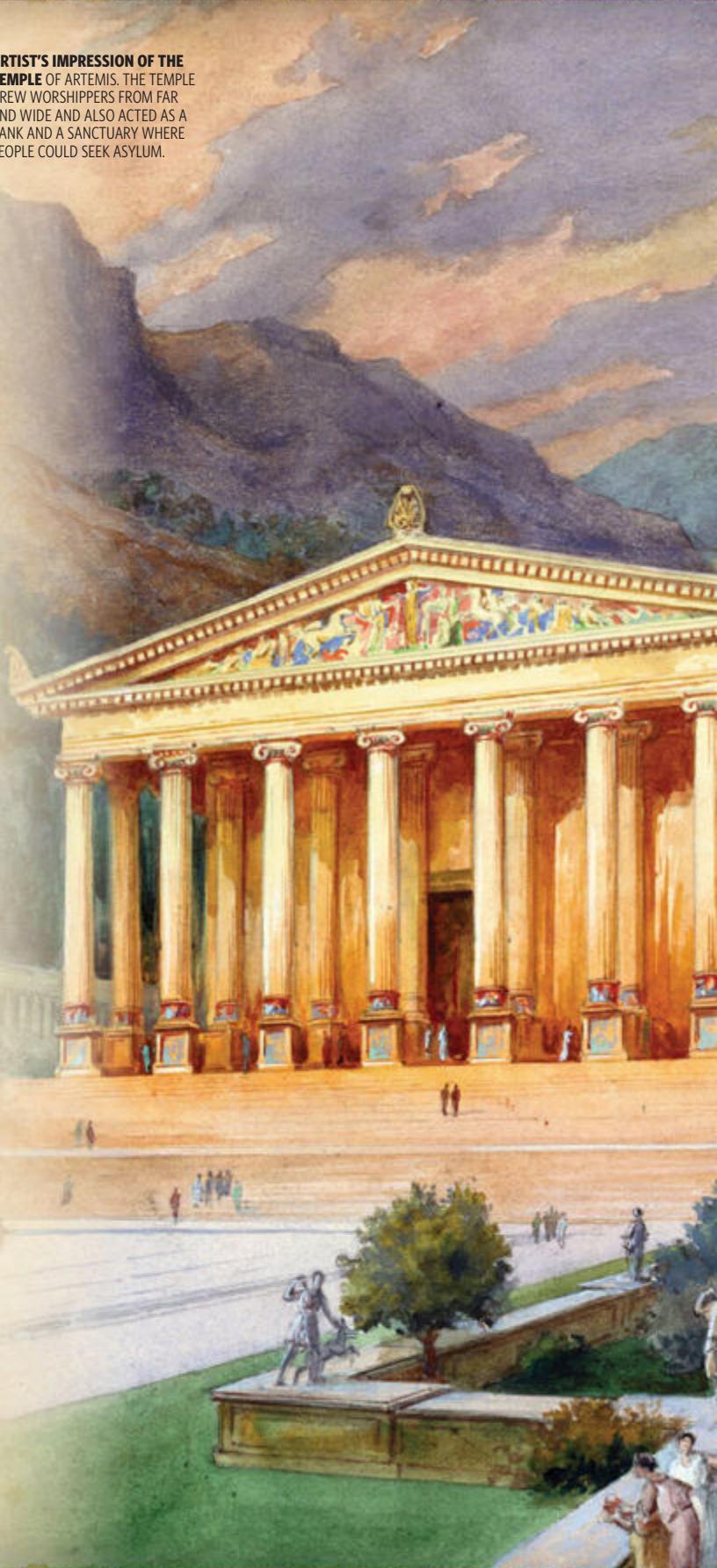


MARY EVANS/SCALA, FIRENZE

#### *From Glory to Oblivion*

The Temple of Artemis was destroyed by the Goths between the third and fourth centuries, and its ruins became a quarry for other buildings. All that remains on the site of the magnificent temple, as imagined by André Castaigne in the 19th century (above), is a lonely column in a muddy wasteland.

**ARTIST'S IMPRESSION OF THE TEMPLE OF ARTEMIS.** THE TEMPLE DREW WORSHIPPERS FROM FAR AND WIDE AND ALSO ACTED AS A BANK AND A SANCTUARY WHERE PEOPLE COULD SEEK ASYLUM.



LOOK AND LEARN/BRIDGEMAN/INDEX

## 4. THE STATUE OF ZEUS AT OLYMPIA

ONE OF THE MOST famous Greek sculptures was the huge representation of Zeus dominating the cella (the most sacred chamber) at Olympia. Sculpted by Phidias in the fourth century B.C., the Statue of Zeus was made of gold and ivory plates overlaid on a wooden framework that ensured its stability. At nearly 43 feet tall it was an impressive piece that portrayed the god seated on a throne decorated with paintings and sculptures. In one hand Zeus held a figure of Nike (the goddess of victory) and in the other a scepter. Cicero, the great Roman scholar, left a detailed description of the statue, which some authors say was transported to Constantinople in the fifth century A.D. and then destroyed during a terrible fire.

**THIS WINGED SHIELD BEARING THE FACE OF A GORGON IS FROM THE TEMPLE OF ZEUS, SIXTH CENTURY B.C.**



KANELLOPOULOS MUSEUM ATHENS/ART ARCHIVE



### *Games in Honor of Zeus*

Olympia hosted the most famous sporting event of antiquity, the Olympic Games, held every four years. Athletes from across Greece competed for glory, with the victor awarded an olive garland, as shown on this vase. The Emperor Theodosius banned the games in the fourth century A.D.

AN ARTIST'S IMPRESSION OF THE MONUMENTAL CHRYSELEPHANTINE (GOLD AND IVORY) STATUE IN THE TEMPLE DEDICATED TO THE FATHER OF THE GODS.



LOOK AND LEARN/BRIDGEMAN INDEX

## 5. THE GREAT PYRAMID AT GIZA



AKG/ALBUM

**PHILO OF BYZANTIUM** said of the pyramids built on the Giza Plateau, "With works such as these, men ascend to the gods, or the gods descend to men." The Great Pyramid, built by Khufu, a 4th-dynasty pharaoh, was the first and largest of the three Giza pyramids erected during the third millennium B.C. It is the oldest of the Seven Wonders and the only one still standing. At about 480 feet tall, this royal tomb took 20 years to build and incorporates millions of blocks of stone, many weighing several tons. It was originally covered with polished white limestone so that it gleamed like gold in the bright desert sun.

**THIS IVORY STATUETTE OF KHUFU** IS THE ONLY SURVIVING PORTRAIT OF THE PHARAOH WHO BUILT THE GREAT PYRAMID.



SCALA, FIRENZE

### Eternal Fascination

This mosaic in St. Mark's Basilica in Venice features one of the earliest representations of the pyramids in European art. It depicts an intriguing legend in which the biblical Joseph became the pharaoh's vizier (adviser) and used the pyramids as granaries to ensure supplies during the seven lean years.

**THE PYRAMIDS AT GIZA** HAVE STIRRED ARTISTS' IMAGINATIONS FOR CENTURIES. THIS 18TH-CENTURY IMPRESSION OF THEBES AND THE PYRAMIDS IS BY ANTONIO BASOLI.

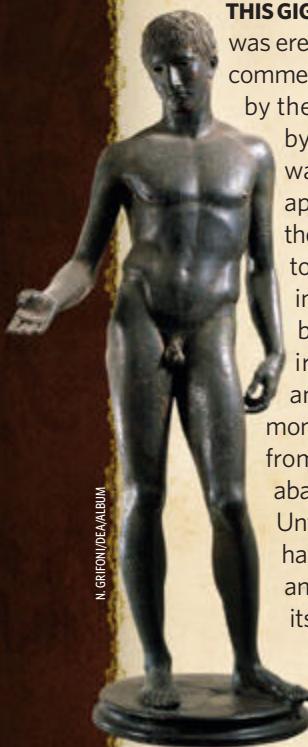




## 6. THE COLOSSUS OF RHODES

**THIS GIGANTIC** statue of the sun god Helios was erected by the islanders of Rhodes to commemorate their defeat of a cruel siege by the Macedonians in 305 B.C. Made by Chares of Lindos, the Colossus was completed in 282 B.C. Standing approximately 105 feet high, it was the tallest statue in the ancient world, towering over the ships it welcomed into the harbor. The Colossus was built with bronze plates on an iron framework, and it stood on an immense marble pedestal. The money to pay for the monument came from the sale of the siege equipment abandoned by the Macedonian army. Unfortunately, the spectacular statue had a very short life: it was toppled by an earthquake barely 60 years after its construction.

**THIS BRONZE STATUE OF A YOUNG MAN** WAS SCULPTED IN THE SAME HELLENISTIC PERIOD THAT SAW THE CONSTRUCTION OF THE FAMOUS COLOSSUS. ROMAN COPY OF A GREEK ORIGINAL.



N. GRIFONI/DEA/ALBUM

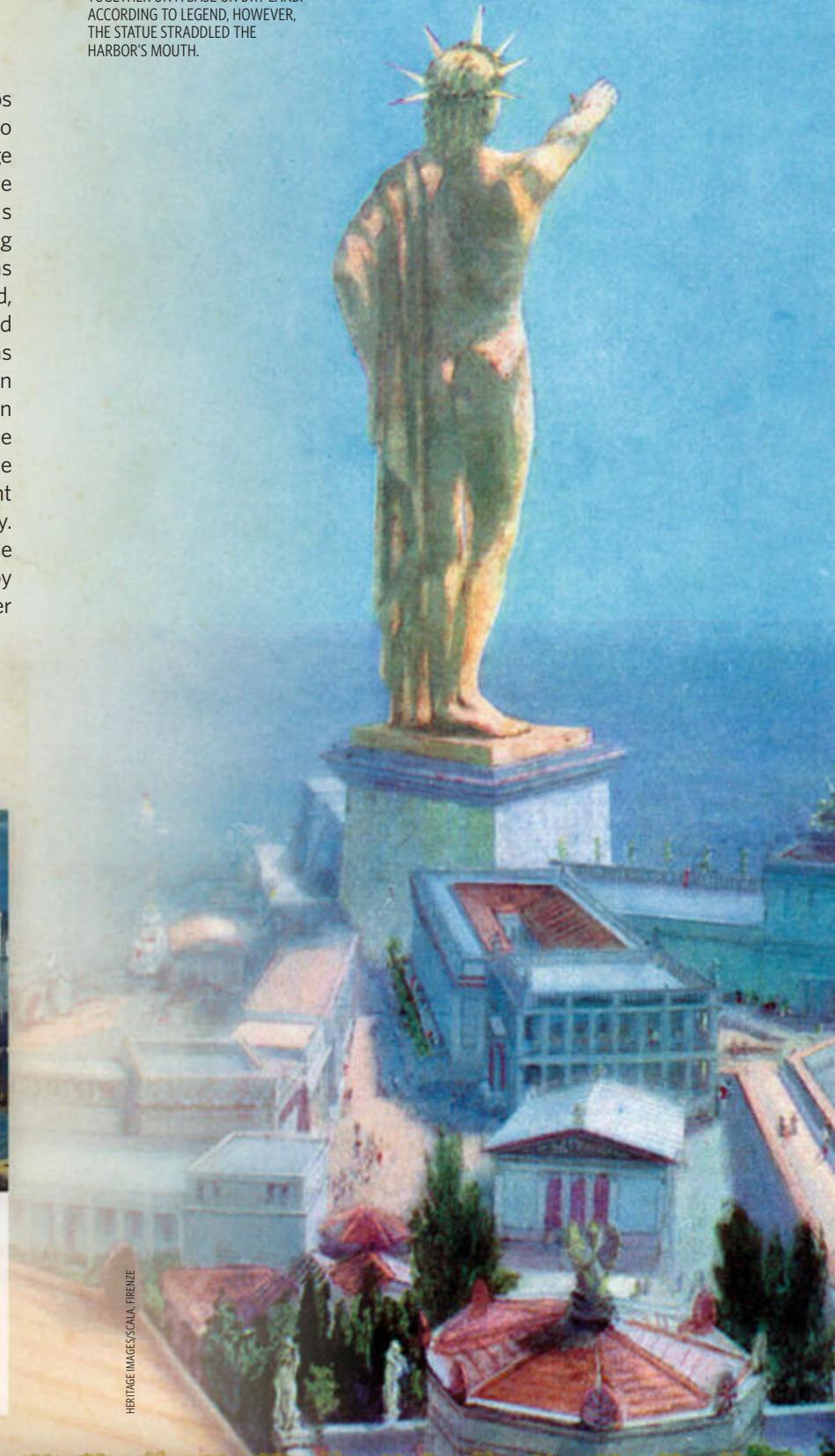


WHITE IMAGES/SCALA, FIRENZE

### The Colossus Disassembled

The pieces of the fallen Colossus were claimed as booty by the Arabs after they conquered Rhodes in 654 (as shown in this painting by a 17th-century artist). The Arabs sold them to a Jewish merchant established in Syria, who claimed he had needed 900 camels to transport them.

**THIS DRAWING SHOWS THE MOST LIKELY POSITION OF THE COLOSSUS, STANDING WITH ITS TWO LEGS TOGETHER ON A BASE ON DRY LAND. ACCORDING TO LEGEND, HOWEVER, THE STATUE STRADDLED THE HARBOR'S MOUTH.**



HERITAGE IMAGES/SCALA, FIRENZE

## 7. THE HANGING GARDENS OF BABYLON

**THIS IS THE LEAST KNOWN** of the Seven Wonders, appearing in the writings of just a few authors. One was Ctesias, in the fifth century B.C., who gives somewhat unreliable details of "hanging" gardens supposedly built by King Nebuchadrezzar II for his wife, Amytis, who missed the green mountains of her homeland. It is possible that the description of the gardens is in fact based on Babylon's impressive city walls. These were erected by Nebuchadrezzar and covered in lush vegetation planted on various tiers, as documented by Diodorus Siculus in the first century B.C.

E. LESNING/ALBUM



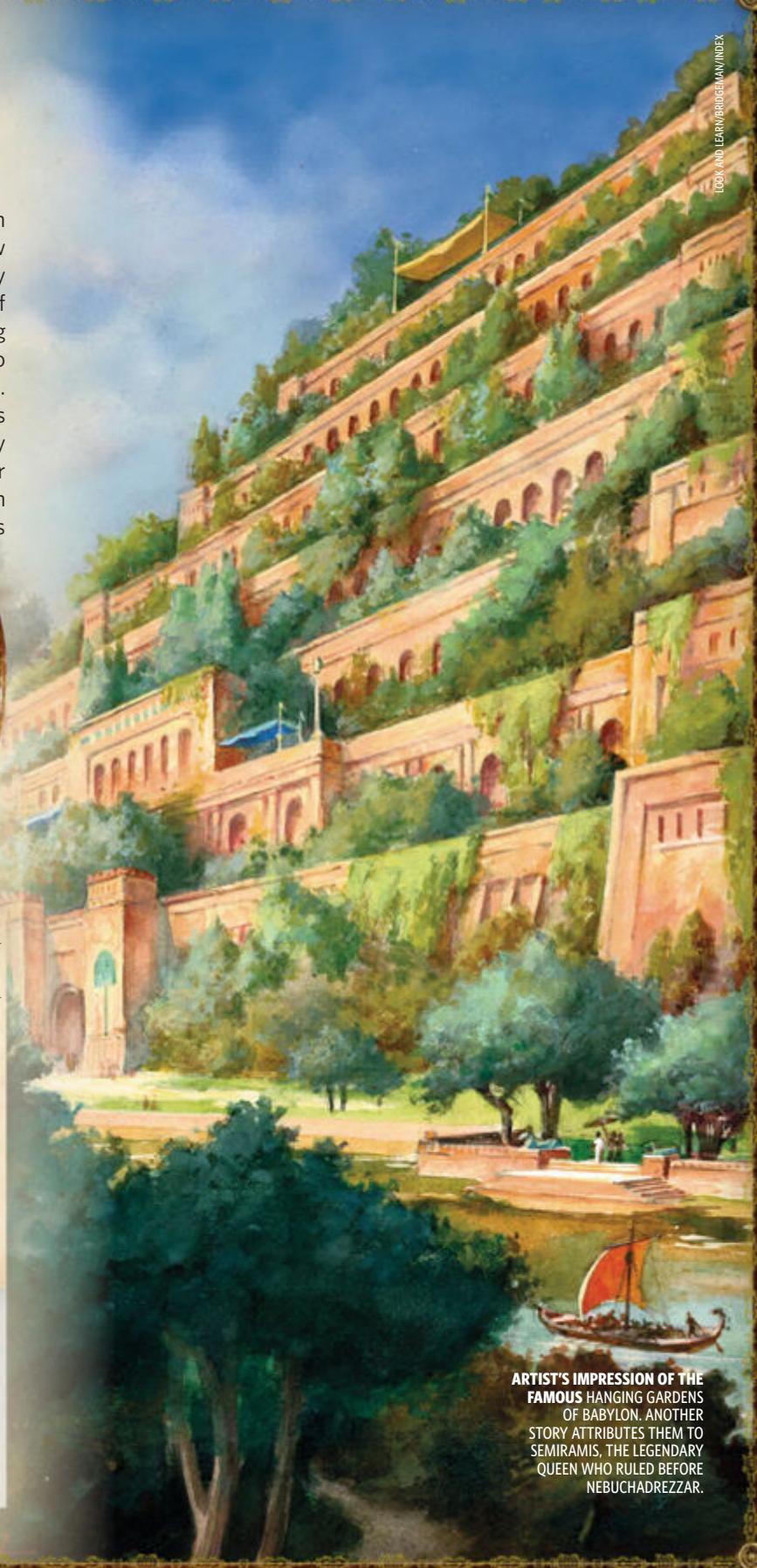
**CYLINDER OF NEBUCHADREZZAR II.** THIS SIXTH CENTURY B.C. CLAY CYLINDER BEARS CUNEIFORM WRITING THAT DETAILS SOME OF THE CONSTRUCTION PROJECTS UNDERTAKEN BY THIS KING OF BABYLON.

DEA/BRIDGEMAN/INDEX



### Gardens in the Desert

According to Berossus, a fourth-century B.C. Babylonian priest, the gardens were arranged in terraces and planted on stepped platforms supported by vaults, rising to a total of around 79 feet, as shown in this lithograph. It is today believed that the gardens may in fact have been in the Assyrian city of Nineveh.



**ARTIST'S IMPRESSION OF THE FAMOUS HANGING GARDENS OF BABYLON.** ANOTHER STORY ATTRIBUTES THEM TO SEMIRAMIS, THE LEGENDARY QUEEN WHO RULED BEFORE NEBUCHADREZZAR.



After witnessing an eruption of Vesuvius in 1779, Henri de Valenciennes attempted to re-create how the catastrophe of A.D. 79 may have looked. In the foreground the painting depicts the death of Pliny the Elder on the beach at Stabiae.



POMPEII AND HERCULANEUM

# CONSUMED BY FIRE

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Nearly 2,000 years ago two Roman ports were entombed in ash following the eruption of Mount Vesuvius. They left behind a chilling record of the final terrifying moments.

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# Birth, Death, Resurrection

## CIRCA 420 B.C.

The Samnites, an Italian tribe, invade Campania and conquer the city of Pompeii.

## 89–80 B.C.

The Roman dictator Sulla besieges Pompeii. The city surrenders and is declared a Roman colony.

## A.D. 62

A powerful earthquake damages the city. Reconstruction is ongoing when disaster strikes again in A.D. 79.

## 79

On August 24 the eruption of Vesuvius begins, burying Pompeii, Herculaneum, and other settlements.

## 1592

The architect Domenico Fontana uncovers marble plates and painted walls while digging to divert the Sarno River.

## 1738

While building a palace near Herculaneum, Joaquín de Alcubierre discovers and explores the remains of the city.

## 1748

After several lucky finds, Alcubierre begins excavating Pompeii, under the patronage of the future King Carlos III.

## 1860–75

Giuseppe Fiorelli conducts the excavation of Pompeii using modern methods. Plaster molds are used to re-create the bodies.



## THE FORUM OF POMPEII

As the center of Pompeii's civic life, the Forum would have been packed when Vesuvius erupted. Archaeologists have found small posters detailing the dates of elections and even a few complaints directed against the candidates.

As the summer sun shone down on the Italian port of Pompeii, its Roman citizens had no idea of the horror that was about to strike. Workmen were busy repairing a villa; painters were decorating a house; out in the yard someone chained a dog to a post. August 24, A.D. 79, was panning out as any other day until just after noon. Then, suddenly, the whole city stopped and stared as a tremendous explosion sent huge stones soaring into the sky above the smoldering volcanic crater of nearby Mount Vesuvius. With its rocky plug gone, the bubbling volcano spewed out a vast column of gas, smoke, and ash more than a mile high. Volcanic debris was soon raining down on the city as panicked citizens fled or hid in their homes. Pompeii was quickly buried under nine feet of ash, the weight of which caused roofs to collapse onto those cowering inside. Yet, remarkably, it seems that most of Pompeii's estimated 20,000 residents managed to escape. It is possible that tremors that had shaken the city earlier that month had prompted some Pompeians to flee.



to nearby Naples and even to Rome. They were the lucky ones, for a terrible fate awaited those left behind. As dawn broke on August 25, wave after wave of superheated gas blasted through Pompeii, Herculaneum, and other settlements built around the volcano. Heat, asphyxiation, and falling debris killed hundreds before the whole area was buried under a dense blanket of volcanic material. Earthquakes, lightning, and tidal waves followed. After two hellish days Vesuvius went quiet.

## The Victims of Vesuvius

The ash that consumed the city also preserved it, making Pompeii a truly unique historical record. After the tragedy the city remained largely hidden from history until the 18th century, when excavations began to reveal skeletons encased in volcanic pumice. Later, archaeologists found that the decaying bodies had left cavities in the hardened ash. They poured plaster into these to create six hundred mesmerizing but morbid human molds. Four hundred

### A POET IN SEARCH OF INSPIRATION

This portrait of a young woman was part of a villa's decor. It is probably the poet Sappho, and bears witness to the sophisticated tastes of Pompeians.

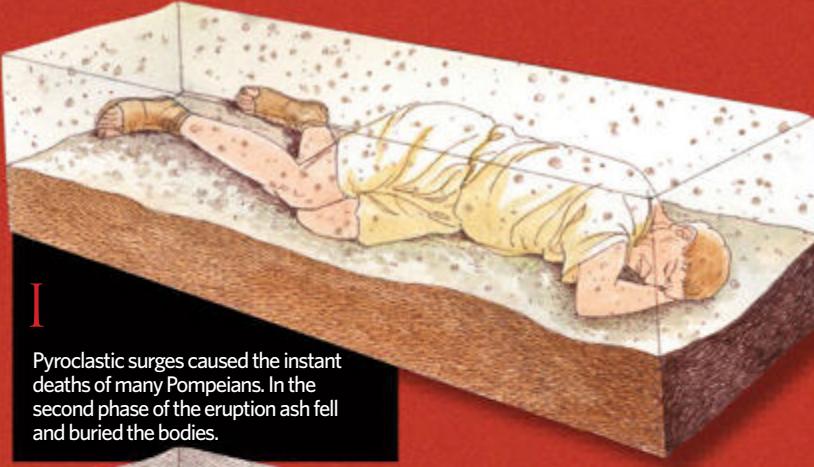


LUISA RICCIARINI/PRISMA

actual bodies have also been extracted from the volcanic stone. By studying their physiology and even their DNA, we have learned much about them. For example, the abundance of kidney stones suggests that they suffered from oral health issues brought on by poor dental hygiene. Thanks to the work of generations of archaeologists, historians, and enthusiasts, we even know the names of more than 2,000 Pompeians.

But it's in their death throes that Pompeii's silent statues are most poignant. Systematic excavations have allowed us to reconstruct the final terrifying moments of hundreds of the volcano's

victims. They reveal a range of recognizable human emotions: fear and pain are obvious, but surprisingly common is greed—especially in the homes of the wealthy. Despite the extreme and obvious danger, many spent precious seconds collecting or protecting their property. As the volcano erupted and the inhabitants of the House of the Faun took cover, the lady of the house raced to collect her jewels and gold coins. Finally, probably driven

**I**

Pyroclastic surges caused the instant deaths of many Pompeians. In the second phase of the eruption ash fell and buried the bodies.

**II**

The volcanic ash hardened around the bodies. As the soft tissue decomposed, the shape of the body was preserved as a cavity.

**III**

Using just a small opening, the archaeologists filled the cavities with plaster, producing molds of the bodies as they lay in their final moments.

**IV**

Fiorelli's technique (previously used to create molds of wooden furniture) produced remarkable results. Minute details could now be seen, including clothing and even facial expressions.

#### THE VICTIMS

## INCINERATED

**T**he first person to produce molds of the bodies of the victims of Vesuvius was the archaeologist Giuseppe Fiorelli in 1863. Their positions led scholars to believe that most had died of asphyxia after a long and agonizing torment. In a recent study, however, Italian researchers questioned this thesis. By analyzing the volcanic material, the structure of the ash, the DNA of the victims,

as well as producing digital simulations of the eruption, they were able to model the impact of the pyroclastic flow from Mount Vesuvius into the ill-fated city.

It has been established that these pyroclastic waves surged through Pompeii for one to two minutes at a time—insufficient for bringing about asphyxia. According to the Italian researchers, the cause of death for most of the Pompeians was the exposure

to the tremendous heat that the pyroclastic surge generated—temperatures in excess of 500°F. The DNA analysis of the bones also reveals changes associated with such extremely high temperatures. Most striking of all is the conclusion reached from the positions in which the bodies were found: far from confirming a drawn-out agony, medical studies point to a more merciful instant death.

out of her mind by the heat, she took shelter in the atrium of the service quarters shortly before it collapsed, burying her and her hoard.

A similar fate awaited a woman assumed to be the wife of a man called Cossius Libanius. Cossius managed to get away, but his wife returned with three slaves to salvage her jewels. All four women perished in the street, clutching their belongings. Such decisions may seem foolish to us, especially with hindsight, but they must be understood in the context of a male-dominated Roman society. It was a risk worth taking when a woman's only freedom came from her personal wealth—the very jewels for which she died.

Such patriarchal authority could also have contributed to 20 deaths in the Villa of Diomedes. The master of the house, perhaps afraid of looters, seems to have ordered his family to stay in the villa. His wife, his small son, two other young people, and a dozen servants climbed into earthenware storage chambers sunk into the villa's floors. With them were hidden jewels, provisions, and fabrics. All 20 died, either crushed or asphyxiated.



ILLUSTRATIONS: GIOVANNI CASELLI



KAOS FOTOTECA 9 X 12

In the Villa of the Mysteries it was not only the owners and their servants who died. Six workmen who had been renovating the house were caught there, perhaps while rebuilding sections damaged by the tremors that preceded the eruption. Death also came to a group of painters who were decorating a building now known as the House of the Painters at Work. Elsewhere many victims were found trying to escape through passageways and skylights, or simply scrambling over the layers of volcanic debris. All met atrocious deaths as they struggled in vain to protect themselves with their clothes or their arms.

### Politicians, Priests, Gladiators

Vesuvius dealt out death irrespective of wealth or social status. Publius Paquius Proculus was a distinguished citizen and politician killed in the eruption along with seven children of his household who were crushed when the building's roof collapsed. It seems that Vesuvius brought an abrupt end to a promising political career. Excavations of the city have revealed surprisingly

well-preserved electoral posters that suggest Pompeii was embroiled in an election campaign between this same Proculus family and the Holconii, the city's richest family. In fact, the Holconii were the "godfathers" of Pompeii, descended from a famous political dynasty, and in A.D. 79 Marcus Holconius Priscus was following in the family footsteps when a thick blanket of ash abruptly ended his life.

Priests fared no better. The priests of the Temple of Isis were having breakfast in the refectory when the catastrophe struck. One attempted to salvage, or perhaps steal, the temple treasury. Encumbered by its weight, he died while turning the corner of a street. Other priests were crushed under a falling pillar from the temple itself. The most daring of all smashed through three walls with an ax, desperately fighting his way out before death engulfed him.

For all their brawn, the gladiators, in their barracks, could not save themselves. More than 60 bodies have been found, some still in chains. With them was the incongruous body of a

### NO ESCAPE

The casts of the bodies of Pompeians attempting to flee the eruption of Vesuvius. They fell, overwhelmed by the cloud of volcanic ash that enveloped the city, with no distinction of class, age, or sex.

## THE VILLA OF THE MYSTERIES

The ash not only preserved bodies but also the homes and possessions of the victims, providing an insight into the lives of Pompeians before the eruption. The living area of this villa is decorated with a series of splendid frescoes with life-size figures, believed to depict an initiation ceremony involving the god Dionysus.





LUCIANO ROMANO/SCALA

**Herculaneum** was a peaceful coastal town of commercial businesses and fine houses for the wealthy. When Vesuvius erupted many ran to the quayside to shelter under structures where boats were moored. There, more than 300 people perished in the fiery blast that vaporized all the water from their bodies in seconds, reducing them to skeletons.



## HERCULANEUM

# BURNED AND BURIED

The main eruption of Mount Vesuvius on August 24, A.D. 79, spewed a huge quantity of ash and rock into the air. The initial impact was greater on Pompeii than on Herculaneum. Here, the volcanic deposits barely reached a total thickness of eight inches in this first phase of the eruption, whereas in Pompeii they were growing at the rate of six inches an hour.

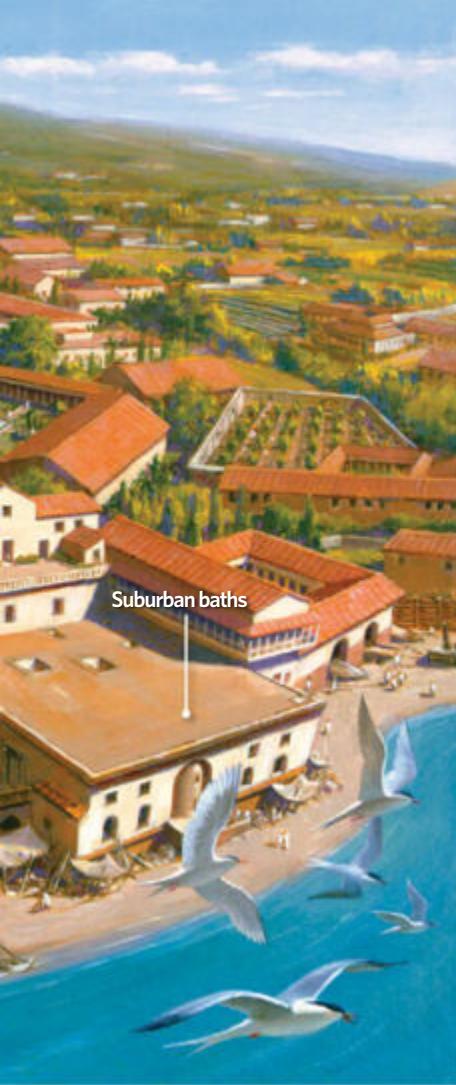
However, the column of volcanic materials ejected from Vesuvius then plunged down to ground level, with up to six clouds of hot gas and rock (pyroclastic flows) flooding down the slopes of the volcano and laying waste to the surrounding area. The city of Herculaneum, only four miles to the west of Vesuvius, was destroyed minutes before Pompeii. The first pyroclastic wave hit Herculaneum a few

minutes before the column of the eruption began its lethal descent, depositing ten feet of burning ash on the city. About an hour later, another much more violent surge left a new deposit of ash five feet deep. Four more burning surges left Herculaneum buried under a layer of ash more than 65 feet deep. The volcanic materials extended the coastline of the Bay of Naples by about half a mile.

wealthy lady, found wearing an emerald necklace. It was long assumed that she had been engaged in a liaison with a handsome gladiator when the disaster struck. However, this now seems doubtful as a room with 17 witnesses and two dogs would not be a most unlikely setting for such surreptitious activity.

Many more people died out in the open, caught in the streets by the blast or crushed by collapsing buildings. Certainly some of these victims delayed their escape to collect or protect their property. In an act we can all relate to, one woman died as she stopped to lock her door.

If those who managed to escape beyond the city walls felt safer, they were wrong. Outside the city, a group of Pompeians was felled by a wave of fire. Again, they had taken with them what possessions they could, including around 500 sestertii, Roman coins. Some tried their luck climbing trees, but nobody escaped the toxic cloud. The remains of three families were also found near the Gate of Nocera. A slave had been leading the way, carrying a huge bundle of belongings. Behind him were two children,



hand in hand, their faces protected by strips of cloth. They were followed by a woman, probably their mother, who died trying to use her tunic to protect the children from the deadly fumes. The man bringing up the rear died with his arms raised, either in a gesture of agony at the moment of death or, perhaps, railing at the gods for his cruel end.

It is believed that among the bodies discovered is one that could be that of Titus Suedius Clemens, an agent of the Emperor Vespasian and probably a senator. According to inscriptions found in the city, Vespasian had dispatched Titus to Pompeii to investigate a real estate corruption scandal. Even by Roman standards Titus was an interesting choice for the job. The Roman historian Tacitus described him as someone who “used his office to secure popularity, being as reckless toward maintaining discipline as he was eager to fight.” Perhaps the promise of rich rewards from shady Pompeian dealings kept Titus in the city long enough to meet his death.

Humans were not the only victims unearthed in Pompeii. In the house of Vesonius Primus a

dog had been left chained up. Terrified, it had tried to climb the mounds of volcanic rock piling into the house. When it reached the end of his chain, the poor animal fell and died of asphyxiation. Worse occurred in the House of the Vestals, where another dog, presumably driven mad with fear or pain, attacked and partially devoured its owner. Such poignant dramas provide intensely personal insight into the collective tragedy that befell Pompeii on August 24, A.D. 79. ■

## THE HOUSES OF HERCULANEUM

Archaeologists have reconstructed this Herculaneum insula, equivalent to an inner-city apartment building. Inside they found burned wood, cupboards, and even a portrait.

JUAN LUIS POSADAS

POSADA HAS AUTHORED MANY BOOKS AND ARTICLES ON ROME IN BOTH ACADEMIC AND POPULAR PUBLICATIONS.

### Learn more

#### BOOKS

*Pompeii: The Life of a Roman Town*

Mary Beard, Non Basic Stock Line, 2010.

*The Complete Pompeii*

Joanne Berry, Thames & Hudson, 2007.

*Pompeii and Herculaneum: A Sourcebook*

Alison E. and M. G. L. Cooley, Routledge, 2013.

*Art in Pompeii and Herculaneum*

P. Roberts and V. Baldwin, British Museum Press, 2013.

#### WEBSITES

[www.pompeisites.org](http://www.pompeisites.org)

# WHEN DEATH ROARED DOWN THE MOUNTAIN

On the day of the eruption, Pliny the Younger was just a few miles away. He left a meticulously detailed account of the disaster, including the death of his own uncle, Pliny the Elder.

## 1 The Eruption

A little before 1 p.m., Pliny and his uncle saw a strange cloud over Vesuvius.  
*"I can best describe its shape by likening it to a pine tree. It rose into the sky on a very long 'trunk' from which spread some 'branches.'"*

## 2 The Rain of Ash

That afternoon Pliny the Elder went by boat to Stabiae. His journey took him through the zone where ash and lapilli were falling from the eruption.  
*"The cinders, which grew thicker and hotter the nearer he approached, fell into the ships, together with pumice stones and black pieces of burning rock."*

Pliny spent the night in a villa in Stabiae. While he slept, the ash built up on the ground and on the roof.  
*"The court which led to his apartment being now almost filled with stones and ashes, if he had continued there any time longer, it would have been impossible for him to have made his way out."*

## 3 Earthquake

In the morning, there was a very powerful seismic event.  
*"The houses now rocked from side to side with frequent and violent*

*concussions, as though shaken from their very foundations."*

## 4 Pyroclastic Surges

From Misenum, Pliny the Younger saw an avalanche of gas, ash, and fragments of rock (a phenomenon termed today a pyroclastic density current) which descended in waves from Vesuvius down to the bay.

*"In the other direction loomed a horrible black cloud ripped by sudden bursts of fire, writhing snakelike and revealing sudden flashes larger than lightning."*

## 5 The Last Wave

From Misenum, Pliny the Younger witnessed the last of the pyroclastic surges flowing down to the Bay of Naples.

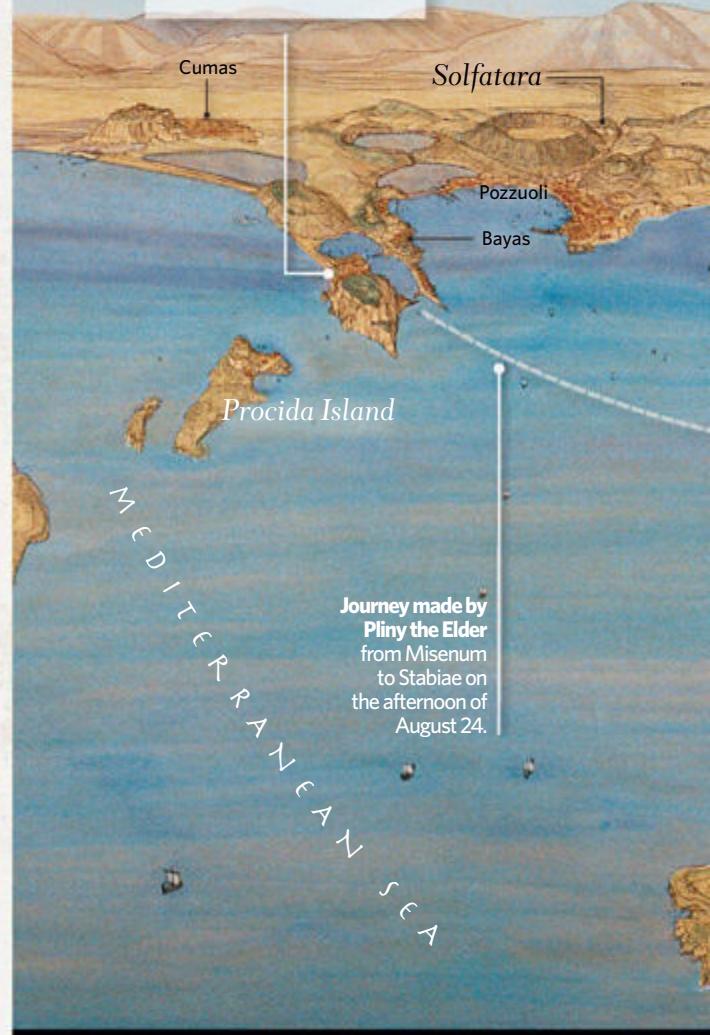
*"It now grew rather lighter, which we imagined to be rather the forerunner of an approaching burst of flames (as in truth it was) than the return of day; however, the fire fell at a distance from us; then again we were immersed in thick darkness, and a heavy shower of ashes rained upon us."*

Then, the dust dispersed, the sun shone, and calm returned.

*"At last this dreadful darkness was dissipated by degrees, like a cloud or smoke; the real day returned, and even the sun shone out."*

## MISENUM

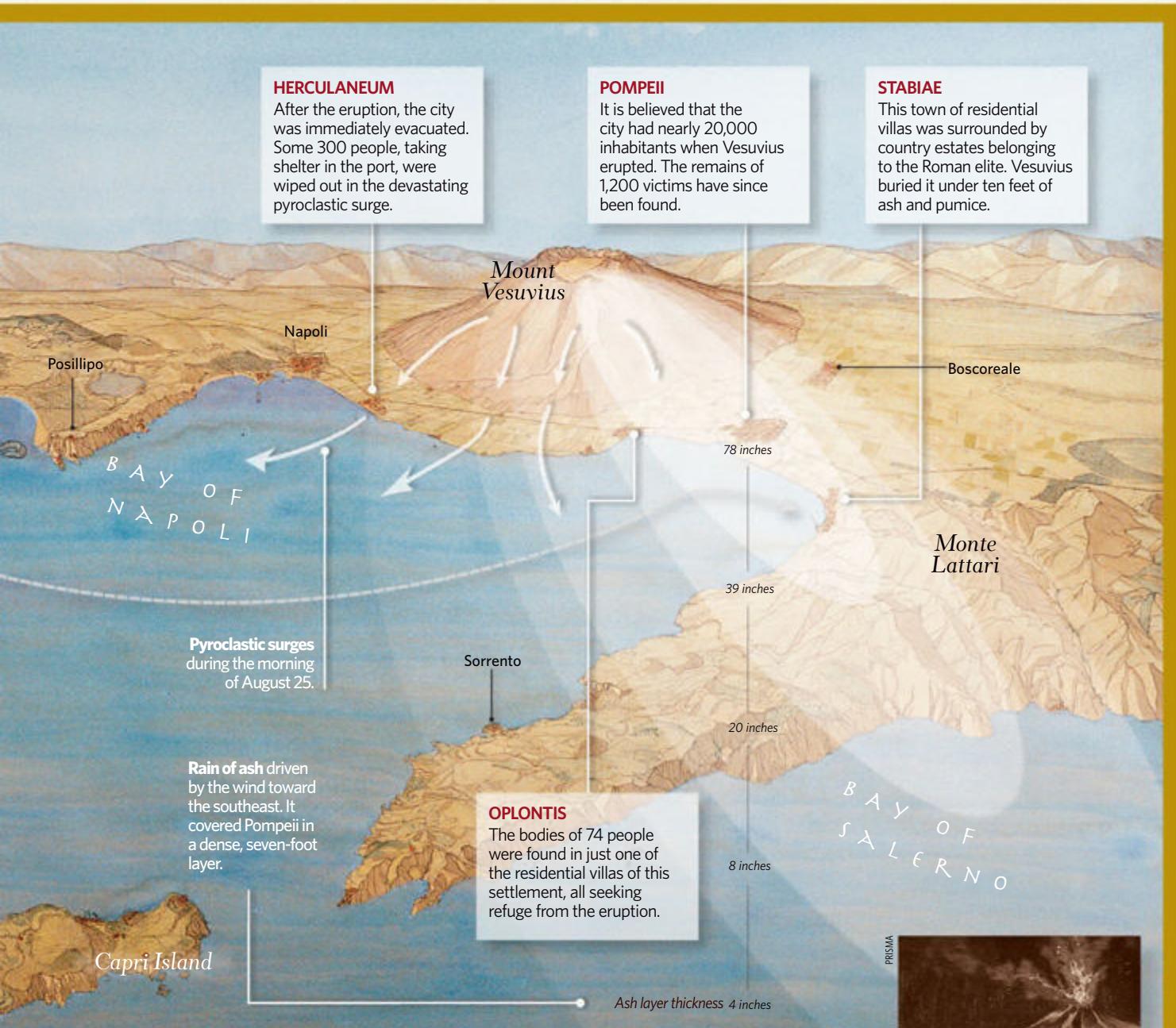
The quake that followed the eruption of Vesuvius spread panic among inhabitants. It sparked a mass stampede from the city, though no damage or deaths were recorded.



Journey made by Pliny the Elder from Misenum to Stabiae on the afternoon of August 24.

## PLINY THE ELDER; CURIOSITY KILLED THE HISTORIAN

OF ALL THE VICTIMS OF VESUVIUS, Pliny the Elder was the most famous. He is best remembered for his *Naturalis Historia*, considered the first scientific encyclopedia ever written. Even though he freely mixed opinion with fact and speculation in its 37 volumes, it

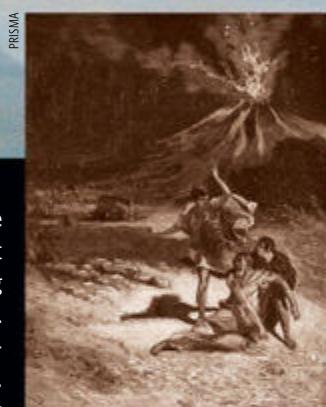


served as a widely respected work of reference until the late Middle Ages.

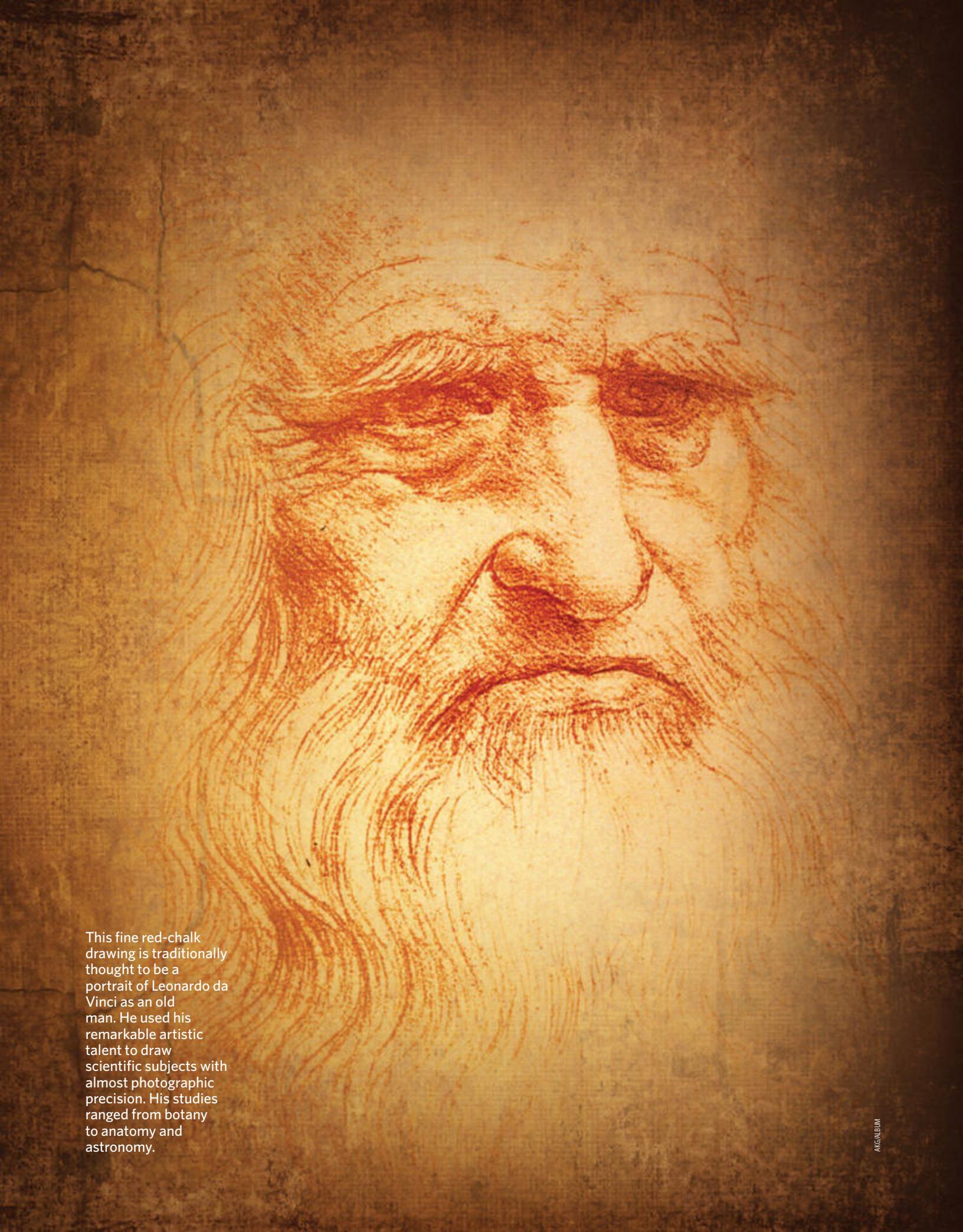
#### NOT SO ELDERLY

There are doubts about the actual cause of Pliny's death. On the afternoon of the eruption Pliny arrived in Stabiae and stayed with a friend. The accumulation of ash and pumice around the house forced him to leave it the following morning. He joined the crowds heading for the beach, but an offshore wind prevented their escape by boat. Apparently, Pliny

then lay down on a blanket, drank some water, and died. His nephew attested that Pliny had died from asphyxiation, making him a victim of the last pyroclastic surge. However, the fact that some of his companions survived makes this very unlikely. Pliny may, in fact, have died from a heart attack. He was 56 years old and is remembered as "the Elder" to distinguish him from his nephew (also a writer), Pliny "the Younger."



PLINY THE ELDER  
IN STABIAE,  
ENGRAVING,  
19TH CENTURY

A detailed red chalk drawing of an elderly man's head, likely Leonardo da Vinci himself. The drawing uses fine, radiating lines to create a sense of depth and volume, particularly around the eyes, nose, and mouth. The hair is depicted with long, flowing strokes. The overall style is scientific and anatomical, characteristic of Leonardo's work.

This fine red-chalk drawing is traditionally thought to be a portrait of Leonardo da Vinci as an old man. He used his remarkable artistic talent to draw scientific subjects with almost photographic precision. His studies ranged from botany to anatomy and astronomy.



DEA/ALBUM

# LEONARDO DA VINCI

## The Scientific Visionary

A man ahead of his time, Leonardo experimented and formulated scientific principles, filling notebooks with his studies in a wide variety of fields.



AKG/ALBUM



The city of Florence was where Leonardo spent his teenage years. He trained as an artist in Andrea del Verrocchio's workshop, acclaimed as one of the finest in the city. The Cathedral of Santa Maria del Fiore is an iconic Renaissance building that might have inspired the young Leonardo when he lived in the Tuscan capital.

The “Mona Lisa” is probably the most famous painting in the Western world. It represents both the artist and the Renaissance age that nurtured his innate talents. There is no doubt that Leonardo was a brilliant artist, yet the fact remains that he is famed for completing only around a dozen known works. Far more prolific are his scientific ideas and observations.

Most of these were as brilliant as his art. Perhaps if the Florentine master had actually published his notebooks, controversial and even dangerous as that would have been, we might think of Leonardo da Vinci as an extremely gifted painter but, much more than that, as a pioneering scientific genius, a visionary centuries ahead of his time.

In his writings he theorized, experimented, and formulated general scientific principles based on empirical evidence—his practical observations of the world around him. It is only in recent decades that experts have begun an in-depth study of the thousands of pages in his manuscripts, realizing that they brilliantly foreshadow many later discoveries and developments in modern science.

A vegetarian with an omnivorous mind, Leonardo da Vinci explored all manner of subjects. Alongside his internationally celebrated painting, sculpture, and architecture, Leonardo made comprehensive studies of geography, cartography, mechanics, geometry, astronomy, anatomy, optics, and botany.

His main method of learning was through observation of the natural world: a tree, a stream, a fossil, and particularly the human

body. His contemporaries knew that Leonardo spent much of his time studying natural philosophy, as science was then known (the English term “scientist” did not appear until 1834). It is also believed that Leonardo planned to publish a variety of scientific treatises based on the material he had included in his notebooks. But in spite of his intense dedication he never managed to achieve that goal.

### A Paper Trail

More than 6,000 pages of Leonardo’s notebooks are still preserved today. They contain thousands of beautiful drawings and diagrams annotated in mirror writing. Possibly for reasons of secrecy, Leonardo wrote from right to left, reversing the letters, so you have to read the notes with a mirror. After his death Leonardo’s notebooks were dispersed among private collections across Europe, most fated to be forgotten and gather dust or worse. The result is that even though 6,000 pages have survived, at least the same number is estimated to have been lost forever. Or perhaps “forever” is too pessimistic a word; in 1965, in the Spanish National Library, in Madrid, two codices, or



**LEONARDO'S WAR MACHINES**

Working as a military engineer for the Duke of Milan, Leonardo designed this tank, complete with 36 cannon, which would be operated by eight men. This reconstruction is in the Château du Clos Lucé, in France.

## A PASSION FOR SCIENCE

### 1490-1499

While living and working in Milan, Leonardo undertook in-depth experiments into optics.

### 1500-1506

Returning to Florence, he conducted research into bird flight. He entered the service of Cesare Borgia.

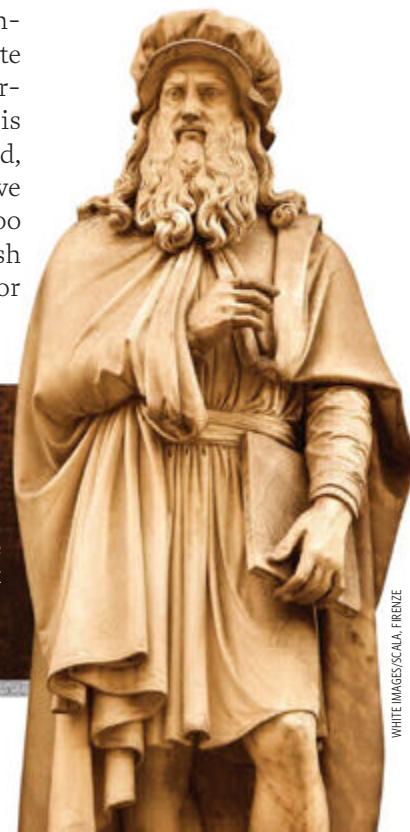
### 1508-1513

Back in the Court of Milan, Leonardo made his most exhaustive studies on human anatomy.

### 1516-1519

After spending a few years in Rome, he moved to the French court, where the king was a great admirer of his art and his wisdom.

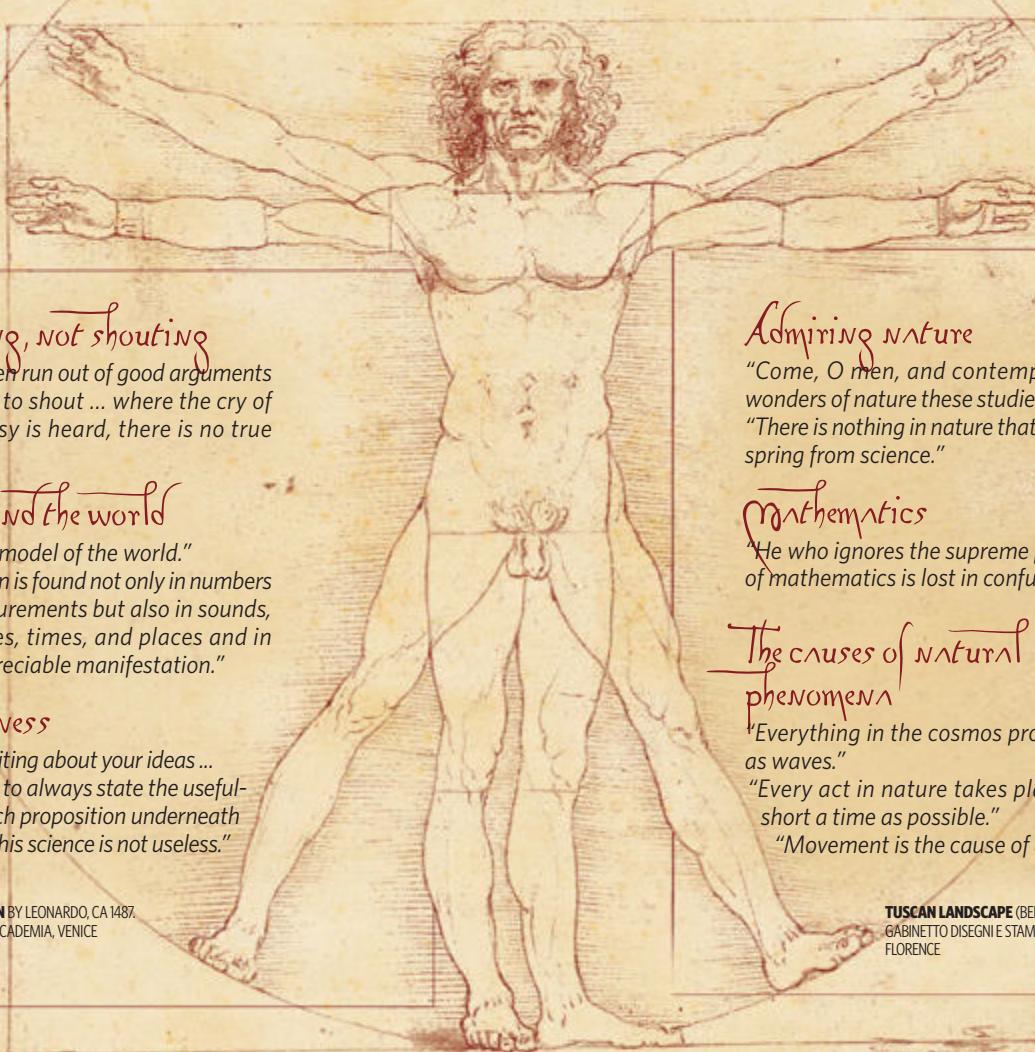
LEONARDO DA VINCI. STATUE BY LUIGI PAMPALONI IN PIAZZA DEGLI UFFIZI, FLORENCE



WHITE IMAGES/SCALA, FIRENZE

# LEONARDO'S METHOD

Leonardo da Vinci's writings often mention the guiding principles behind his work as a scientist, highlighting the importance of mathematics and the search for patterns in nature.



## Thinking, not shouting

"When men run out of good arguments they start to shout ... where the cry of controversy is heard, there is no true science."

## Man and the world

"Man is a model of the world."  
"Proportion is found not only in numbers and measurements but also in sounds, landscapes, times, and places and in every appreciable manifestation."

## Usefulness

"When writing about your ideas ... remember to always state the usefulness of each proposition underneath it, so that this science is not useless."

VITRUVIAN MAN BY LEONARDO, CA 1487.  
GALLERIA DELL'ACADEMIA, VENICE

## Admiring nature

"Come, O men, and contemplate the wonders of nature these studies reveal."  
"There is nothing in nature that does not spring from science."

## Mathematics

"He who ignores the supreme precision of mathematics is lost in confusion."

## The causes of natural phenomena

"Everything in the cosmos propagates as waves."  
"Every act in nature takes place in as short a time as possible."  
"Movement is the cause of all life."

TUSCAN LANDSCAPE (BELOW) BY LEONARDO.  
GABINETTO DISEGNI E STAMPE DEGLI UFFIZI,  
FLORENCE

collections of manuscripts, by Leonardo were miraculously discovered hidden among dusty bundles of paper.

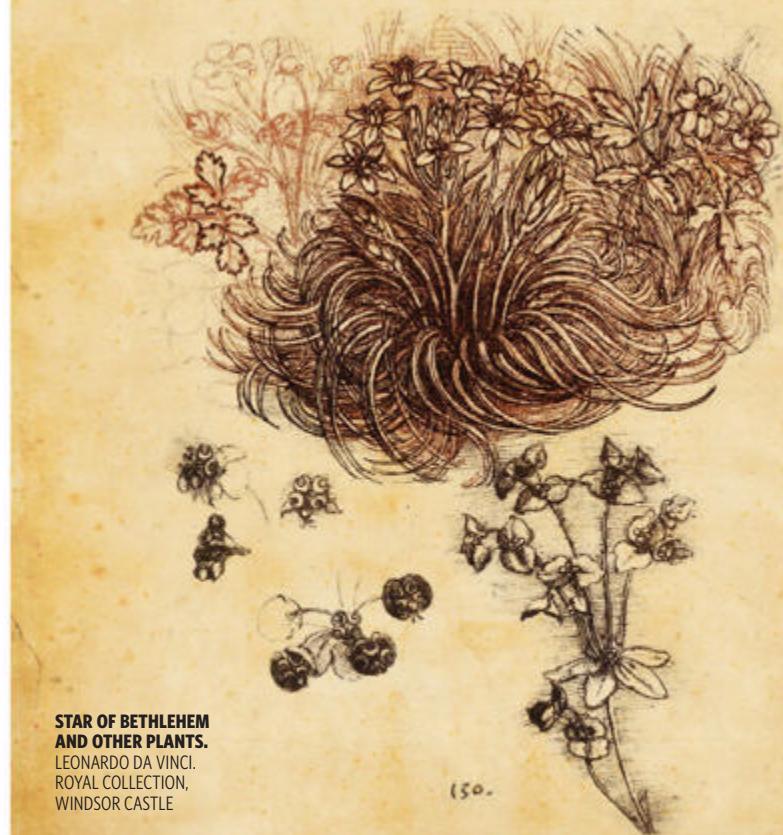
Covering disciplines as varied as mathematics and anatomy, we get a clear idea of the sweeping nature of Leonardo's intellect by browsing the titles of some of his manuscripts: "Book on Perspective"; "Treatise on Continuous Quantity and Geometry as a Game"; "Treatise on Nerves, Muscles, Tendons, Membranes, and Ligaments"; and "Special Book on Muscle and Limb Movements."

## Observation and Art

Leonardo's studies of dynamism and form demonstrate his extraordinary observation skills and precise drawing. These studies revealed to Leonardo links between apparently completely unconnected phenomena and processes. Another aspect still surprising today is how he would use multiple perspectives to better transmit the intricacies of the object he was studying. When Leonardo wanted to create realistic pictures he blurred the outlines, using the sfumato technique (as seen in his misty-eyed "Mona Lisa") to better reflect how we actually perceive objects. In contrast, when Leonardo drew objects with clear outlines he did so to precisely represent natural processes, such as the turbulence caused by water streaming into a pond.

Leonardo was particularly fascinated by the way water moves, seeing its fluidity as a fundamental characteristic of all living things. His notebooks reveal that he was ahead of his time in studying fluid dynamics; he was the first known person to analyze and provide a detailed description of how a whirlpool works. Even today, with the help of nonlinear equations, we are still unable to fully simulate and understand the dynamics of turbulent flows.

Among the many subjects that captivated Leonardo's inquisitive mind were plants and trees, and again he made potentially pioneering realizations. For example, he discovered that you could measure the age of a tree and the climatic conditions it had experienced by analyzing its growth rings. Four hundred years before this observation was proven scientifically, he



SCALA, FIRENZE

## AN EXTREME PERFECTIONIST

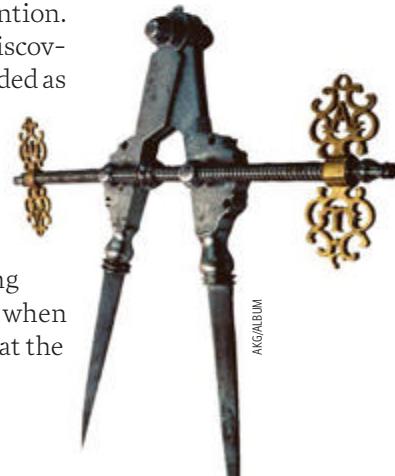
AS LEONARDO ADVANCED his scientific research, he would apply the principles he learned to his work as a painter. As time went by, he became increasingly obsessed with realistic and highly detailed portrayals of the human physique and nature in general. In his "Treatise on Painting," for instance, he gives very specific advice on how to paint trees, and the effect of light on them.

wrote that "the circles of cut tree trunks show how many years they lived and whether they were drier or wetter, depending on how thick or thin they are." Leonardo also managed to correctly understand how plant shapes form in response to the Earth's gravity (geotropism) and how their direction changes in response to sunlight (phototropism).

Fossils also attracted Leonardo's attention. At that time marine fossils of mollusks discovered on mountaintops were widely regarded as remnants washed there by the biblical Flood. When investigating these petrified remains, Leonardo noticed that in some fossils the two halves of the mollusk shell were still joined together. Knowing that the elastic tissue joining these two halves rapidly breaks down when they die, Leonardo rightly concluded that the

## THE ERA OF EXPERIMENTS

Leonardo not only used a compass in his investigations, he even designed a parabolic compass. Below: 17th-century German compass.

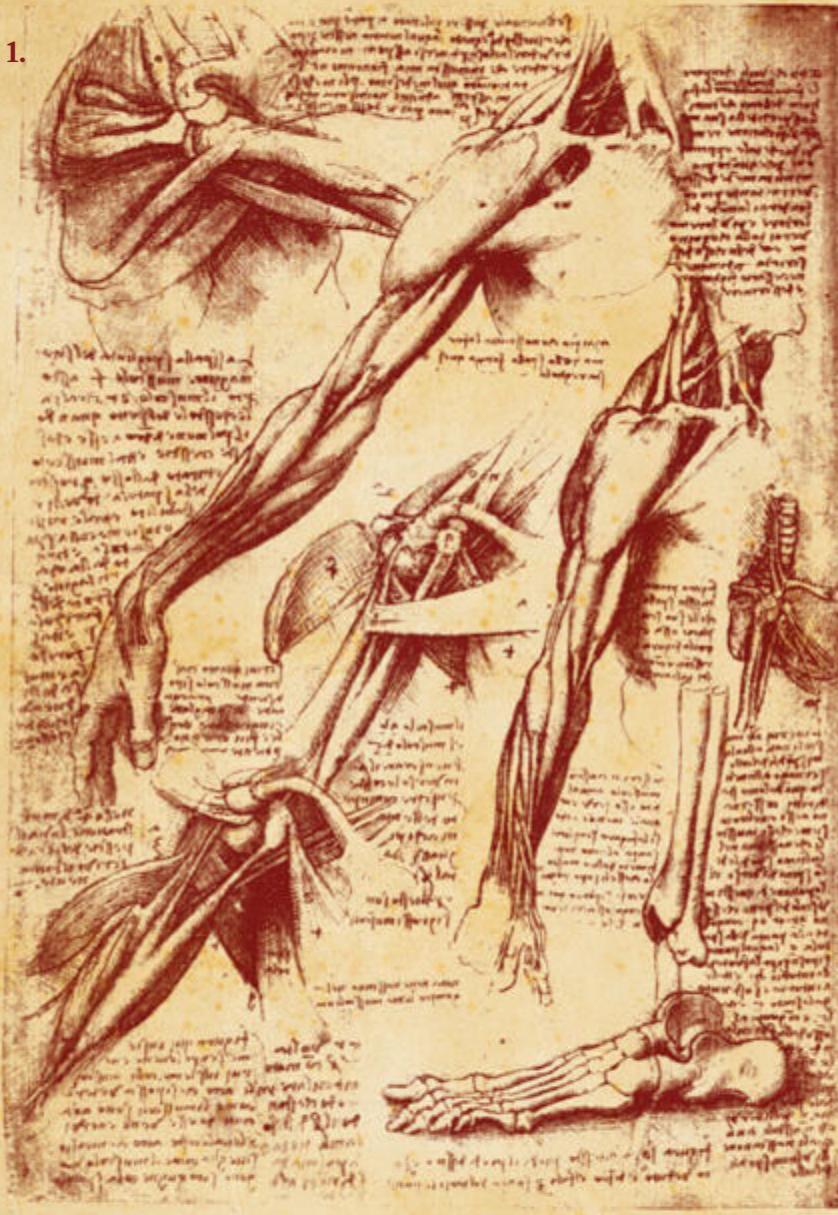


AKG/ALBUM

# MAN THE MACHINE, AS SEEN BY

Leonardo da Vinci performed dissections of corpses, allowing him to produce extraordinarily

1.



2.



CORBIS/CORDON PRESS

3.



AGENCE FRANCE PRESSE/ALAMY

## 1. Muscles and nerves

Leonardo da Vinci considered the human body as no more than a machine, albeit the most perfect machine to be found in Nature. He said the muscles work like cables, joints were nothing other than hinges, and the lever effect was applicable to the limbs.

## 2. The heart

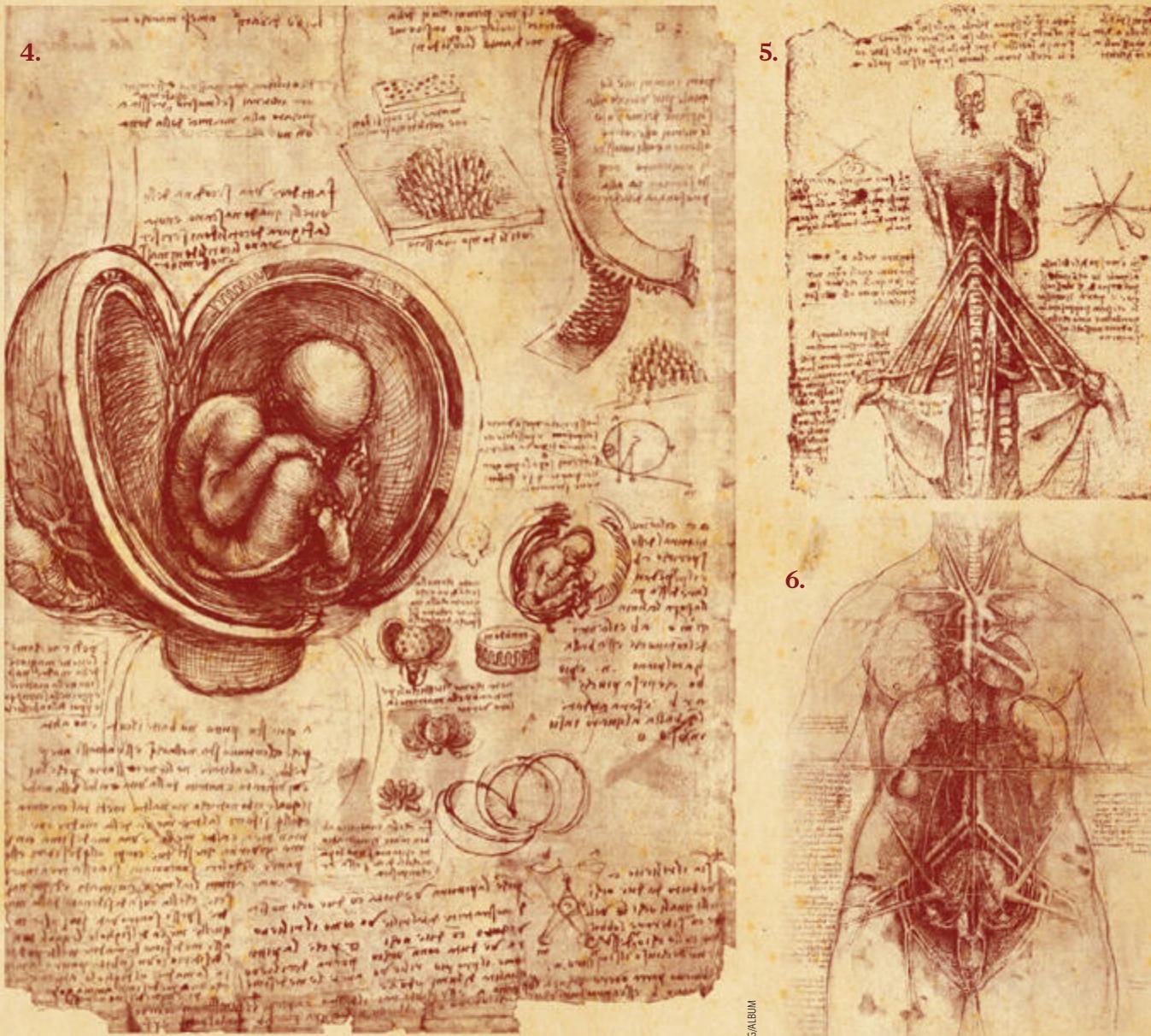
In his notes Leonardo meticulously analyzed the heart cavities and pointed out their ability to dilate and contract. But he did not understand the mechanism of blood circulation through the veins and arteries. He thought human blood moved like plant fluids.

## 3. Sight and the brain

Before Leonardo, no one had detected that the optical nerves at the rear of the eye are connected to the brain. He also dissected ox heads, using wax to support the structure of the cranium. That enabled him to detect the gyrus, the folds that we find on the surface of the brain.

# LEONARDO DA VINCI

detailed and accurate drawings of the human body.



AKG ALBUM

AKG ALBUM

## 4. Gestation

Leonardo first studied gestation in cows but was later able to analyze a human baby in the womb. He made a drawing of it and commented underneath, "the fetus is surrounded by dense, viscous water ... which distributes its weight and the baby's weight to both sides of the uterus."

## 5. The nervous system

Based on mechanical principles, Leonardo established that the muscles were connected to the nerves, and the nerves to the brain. His drawings showed "a tree of nerves descending from the brain and back of the neck, which spreads through the spinal column to the arms and legs."

## 6. Internal organs

Leonardo described the organs of the human body in unparalleled detail, although he did not always understand what their function was. Though he realized that the larynx and trachea are involved in producing the voice, he thought food was pushed through the body by respiration.

Leonardo is believed to have designed this double-helix staircase for the Château de Chambord in France. This royal palace was a residence for King Francis I. The staircase is considered a masterpiece of the French Renaissance.



mollusks could not have been swept onto the mountaintops by the flood. If they had, the two halves would have separated. So they must have been buried in the very place they had lived, which later emerged as a mountain. In fact, the eminent biologist Stephen Jay Gould noted that Leonardo was ahead of his time in developing concepts that paleobiology only properly established in the 20th century. He even correctly described the process of erosion, sedimentation, and accumulation that geologists now know as the rock cycle.

Working at a time when the dissection of human bodies was almost entirely forbidden, Leonardo's anatomical observations were just as groundbreaking. For example, Leonardo stated that the heart is a muscle, and that it has four cavities, not two. This went against medieval medical thinking which based its anatomical understanding on the works of Galen, the Greek physician from the second century A.D. Galen believed that the heart expanded by filling with air from the lungs, but Leonardo was the first to understand that the heart's active movement was not expansion but rather contraction, pushing blood to vessels. Leonardo observed that this movement is synchronized with the pulse and the beating of the heart on the chest wall.

Leonardo also correctly described the mechanics of the heart's valves, making accurate drawings of the valve opening and closing the aorta. These are astonishingly similar to contemporary high-speed photographs of this process. Yet this did not lead Leonardo to contradict Galen's theory of blood circulation. Leonardo thought that both veins and arteries carry blood around the body in a constant back-and-forth movement, just as inhalation and expiration use the same breathing passages. Our modern understanding of blood circulation had to wait more than a hundred years for the experiments and writings of the British doctor William Harvey.

## The Principles of Nature

Drawn to the processes of light and sound, Leonardo theorized that they expanded in waves, and he also correctly understood energy



E. LESNING/ALBUM

DISSECTION LECTURE,  
IN THE CHIRURGIA  
MAGNA, BY GUY DE  
CHAULIAC, 1363

## THE CHALLENGE OF DISSECTION

**FROM AROUND 1505,** Leonardo had the rare opportunity to dissect corpses, which he considered useful for advancing his knowledge of human anatomy. "I have dissected more than ten human bodies," he noted, "cutting all the various members and removing the very minutest particles of the flesh by which these veins are surrounded without causing them to bleed."

dissipation, showing how a moving ball gradually loses power. He recognized that movement is relative: "The movement of air against a stationary object equates to the movement of a moving object against stationary air," he wrote in the "Codex Arundel." In other works he went on to anticipate Newton's third law which states that "For every action there is an equal and opposite reaction." For instance, he noted that an eagle's wing exerts as much force against the air as the air does against the eagle's wing.

Despite these truly farsighted observations, Leonardo didn't formulate any of his ideas into what we now know as "laws of nature." Extrapolating laws from empirical observations was a concept completely alien to Renaissance thinking. Even dedicated scientists like Nicolaus

## THE FRENCH PERIOD

While in France, Leonardo planned ambitious projects like a canal joining the Atlantic with the Mediterranean. Below: the coat of arms of King Francis I.



BRIDGEMAN/INDEX

# LEONARDO'S X-RAY VISION

His dissections of corpses enabled Leonardo to produce drawings of the inside of the human body with an accuracy that would not be matched for centuries. This drawing, dating from 1507, shows the organs in the thorax, the abdomen, and the vascular system of a woman.

## Heart

Leonardo devoted several studies to this organ. His notes say, "The right ventricle has two orifices, one of which, the aortic vessel, opens outward, while the other is the venal artery, which runs from the heart to the lung."

## Liver

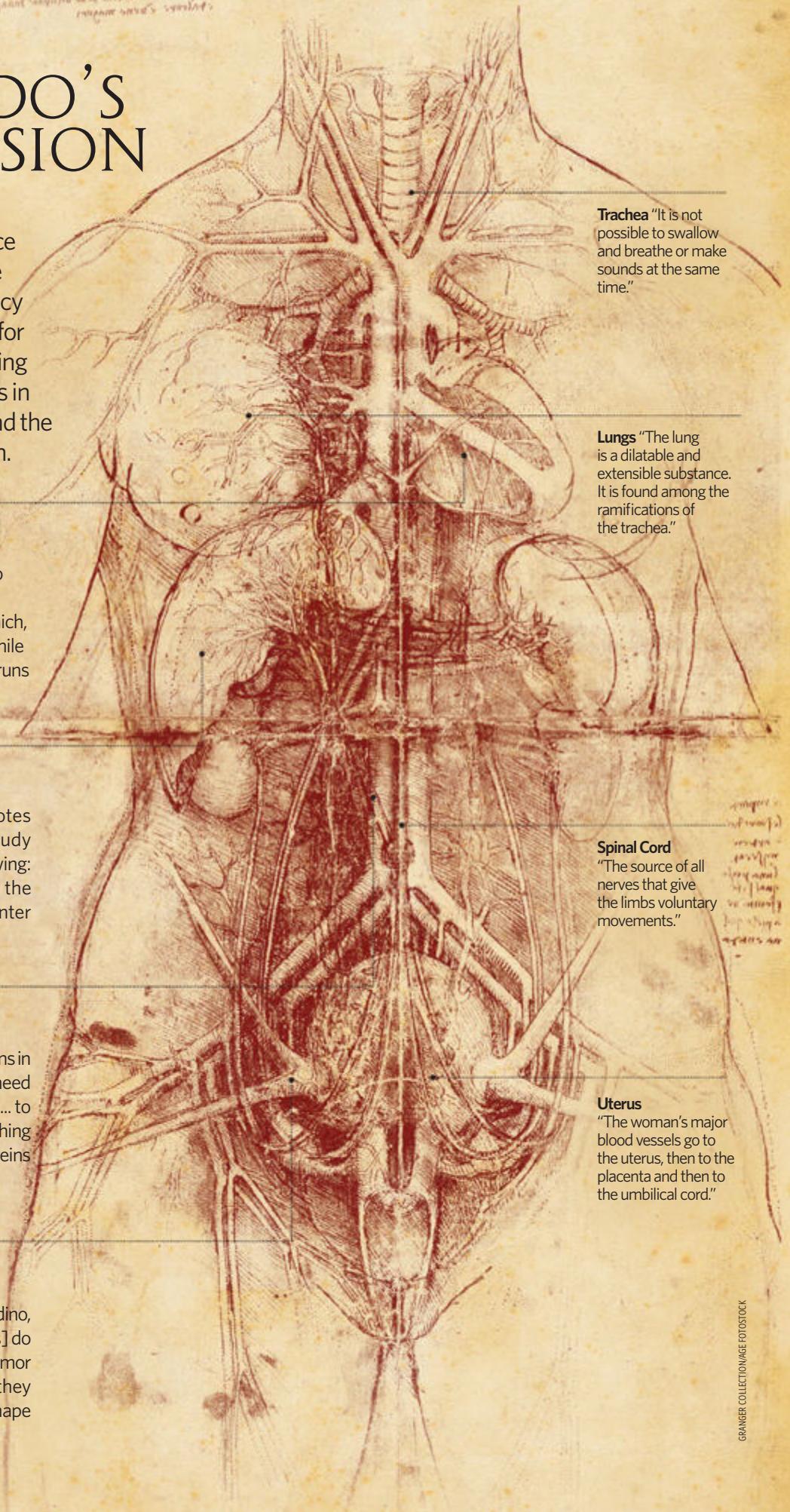
Leonardo da Vinci's numerous notes on this meticulous anatomical study reveal how he approached this drawing: "I drew the way in which some of the ramifications of the liver vessels enter below others."

## Vena Cava

When writing about the two main veins in the body, Leonardo said that "they need to be drawn from the opposite side ... to make them visible from the side touching the spine." He also said that smaller veins feed the dorsal spine.

## Ovaries

Leonardo refuted the anatomist Mondino, "You say the 'sperm vessels' [ovaries] do not excrete real semen but rather a humor similar to saliva ... If that were so, they would not need to have the same shape and function in women as in men."

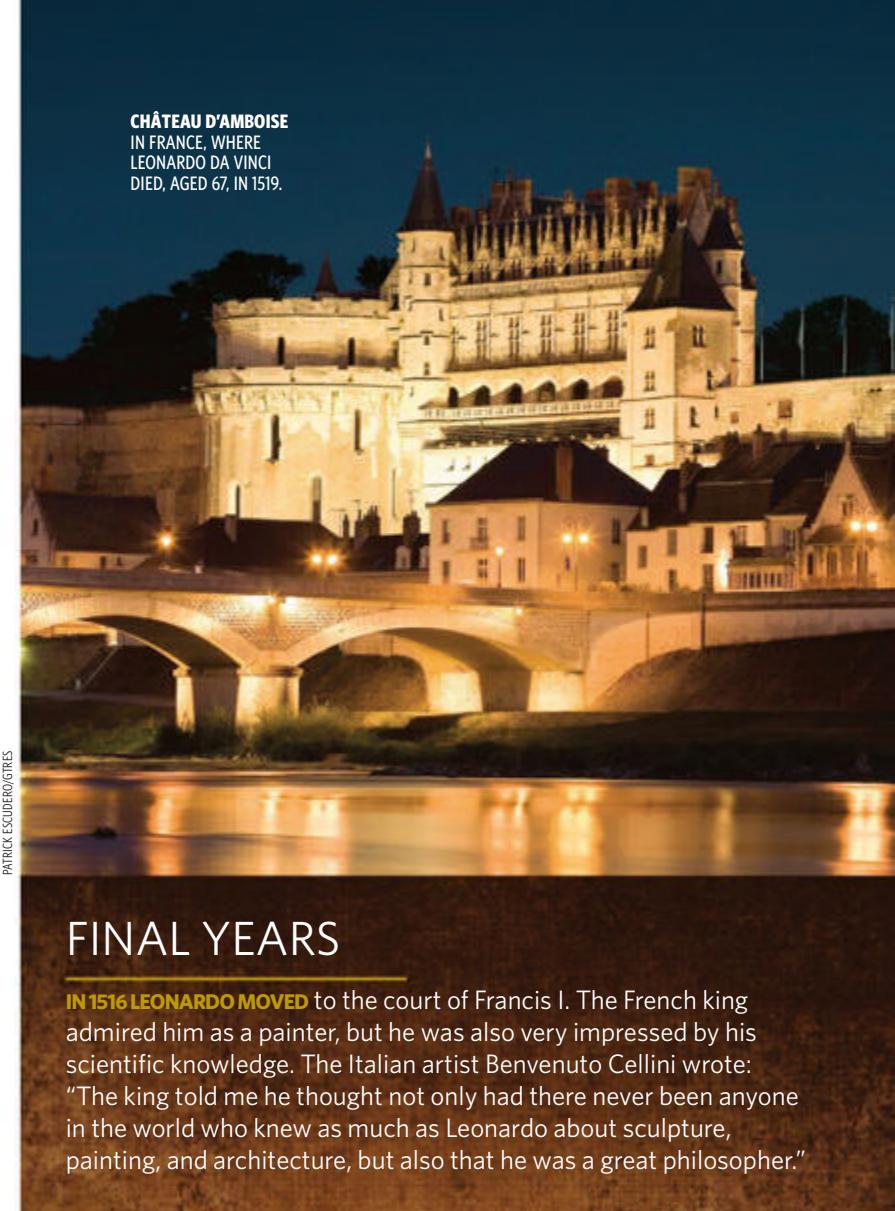


Copernicus and Galileo Galilei never mentioned laws of nature: Copernicus talked of symmetries and harmonies; Galileo spoke of proportions and principles. Later René Descartes would explicitly mention “the laws that God has established in nature.” But it was only two centuries after Leonardo, when nascent European states were increasingly centralizing their political laws, that people started to use the term “laws” to define the various natural processes. Robert Boyle, the 17th-century Anglo-Irish scientist, did so to explain the transformation of chemical substances, as did Isaac Newton to describe the movement of the planets. But although Leonardo never spoke of “laws of nature,” in one of his notebooks he praised the “wonderful works of nature” (*opere mirabili della natura*) and wrote that “a more beautiful, more simple, or more economical invention will never be discovered than those in nature, as in her inventions nothing is missing and nothing is superfluous.”

## Leonardo’s World

As the Austrian-born art historian Ernst Gombrich said, Leonardo da Vinci had a “voracious appetite for detail.” He mastered and admired geometry, but for him the complexity of nature could not be reduced to figures and mechanical analysis. He paid special attention to the qualities of things. Leonardo produced in-depth descriptions and drawings of the human body’s mechanisms, but he made clear that the body is much more than just a machine. Similarly, he did not consider the world as merely mechanical; he did not see it as governed by abstract principles or by God but rather by the incessant creativity of nature. Leonardo recognized that there was an interdependence and self-organization characteristic to all living beings. In this he envisioned what we today call food chains and the food cycle, as one can see in this fragment from the “Codex Atlanticus”: “Mankind and animals are a medium for the transit and conveyance of nutrients.” He also considered that organisms maintain their identity despite their continuous interchange with the environment, as beautifully expressed in a lengthy passage in

CHÂTEAU D’AMBOISE  
IN FRANCE, WHERE  
LEONARDO DA VINCI  
DIED, AGED 67, IN 1519.



## FINAL YEARS

**IN 1516 LEONARDO MOVED** to the court of Francis I. The French king admired him as a painter, but he was also very impressed by his scientific knowledge. The Italian artist Benvenuto Cellini wrote: “The king told me he thought not only had there never been anyone in the world who knew as much as Leonardo about sculpture, painting, and architecture, but also that he was a great philosopher.”

his anatomical studies titled “How the animal’s body continually dies and is reborn.” Because of all this, Leonardo da Vinci is today considered a precursor of the qualitative and holistic perception that is essential in understanding the world’s complexity and beauty. ■

JORDI PIGEM

PIGEM IS AN AWARD-WINNING WRITER ON PHILOSOPHY, SCIENCE, AND ECOLOGY.

*Learn more*

### BOOKS

**Leonardo da Vinci: Notebooks**

Selected by Irma Richter, Oxford University Press, 2008.

**Leonardo da Vinci on the Human Body:**

*The Anatomical, Physiological, and Embryological Drawings of Leonardo da Vinci*

Leonardo da Vinci, Gramercy, 2003.

**Leonardo da Vinci: The Marvellous**

*works of Nature and Man*

Martin Kemp, Oxford University Press, 2006.

### WEBSITES

[www.universalleonardo.org](http://www.universalleonardo.org)

[legacy.mos.org/Leonardo/](http://legacy.mos.org/Leonardo/)

# LEONARDO, A TRAILBLAZER OF

The curiosity Leonardo felt for all natural phenomena made him a harbinger of many of the



AGE PHOTOSTOCK

## 1 The circulation of the blood

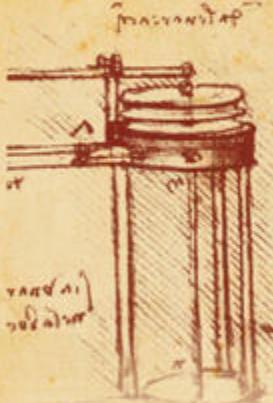
**IN SPITE OF** his detailed observations, Leonardo did not understand the mechanism of blood circulation. Instead, he spoke of a "pool of blood that lung respiration causes to dilate and contract" like sap.



PRISMA

## 2 Eyes and eyesight

**LEONARDO PERFORMED** eye dissections (after boiling them in egg white and water) and considered the functions of the crystalline lens, cornea, and retina. He also studied stereoscopic vision: how the two eyes form an image of an object.



CORDON PRESS

## 3 The laws of mechanics

**ALTHOUGH** he initially thought that the movement of bodies was the result of a "vital spirit," Leonardo sensed that there were general physical laws. However, he did not do the necessary mathematical calculations to reach them.

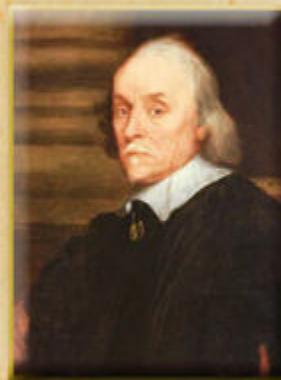


AGE PHOTOSTOCK

## 4 The planets and the solar system

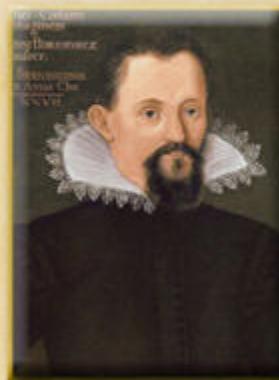
**THOUGH** not an astronomer, Leonardo took a great interest in the heavens. He said that the sun was "the body with the greatest size and energy in the universe," the source of light and life, and he even said "the sun does not move."

**WILLIAM HARVEY** discovered that blood circulates. In 1628 he published a book that proves that blood moves through a circuit via the heart, rather than flowing slowly toward the liver as Galen had believed.



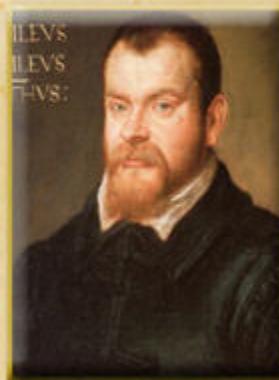
BRIDGEMAN/INDEX

**JOHANNES KEPLER** demonstrated in 1604 that the crystalline lens works with the cornea to bend and focus rays of light on the retina, the membrane in the eye (which Platter had already suggested as the sensitive organ of vision).



E. LESSING/ALBUM

**GALILEO GALILEI** wrote a letter in 1604 in which he formulated the law of falling bodies. He had done a series of ingenious experiments that enabled him to calculate the acceleration of a body sliding down a slope.



ALBUM

TOP: Heart of an ox  
BOTTOM: William Harvey

TOP: The eye and the optical nerve  
BOTTOM: Johannes Kepler

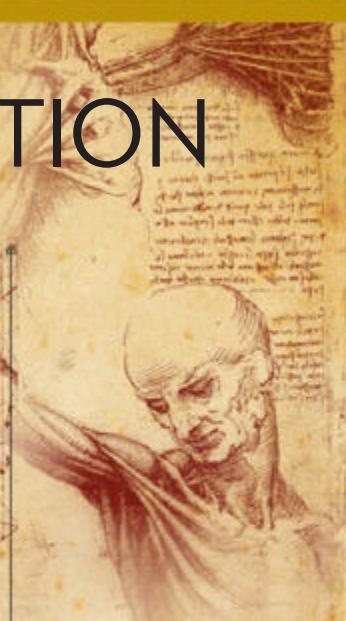
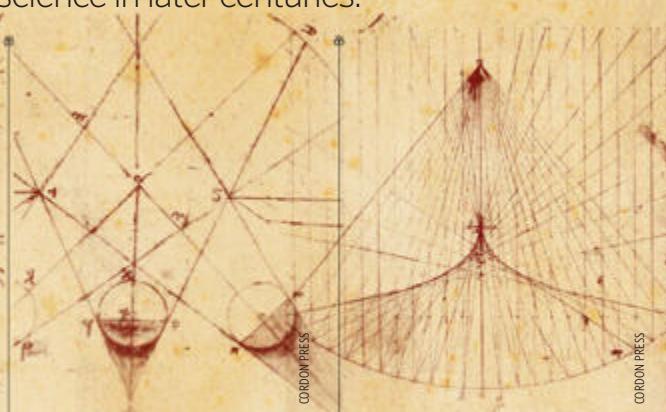
TOP: Drawing of a mechanism  
BOTTOM: Galileo Galilei

TOP: Distance from the sun to the moon  
BOTTOM: Nicolaus Copernicus

UNIVERSAL IMAGES/ALBUM

# THE SCIENTIFIC REVOLUTION

achievements of modern science in later centuries.



AGE FOTOSTOCK

## 5 Geology and fossils

LEONARDO SAID that marine fossils were not remains of the biblical Flood, since they were found in different layers of rock. He thought the Earth had changed over time. This was opposed to the dogma of divine creation.

NICOLAUS STENO was interested in marine fossils and in 1668 theorized that there were various geological layers formed at different points in history, although he claimed his view did not contradict the Bible.



GRANGER/AGE FOTOSTOCK

## 6 The wave theory of light

OBSERVATION led Leonardo to compare the way light travels with the waves formed when you throw a stone into a pond. He speculated that "everything in the cosmos propagates as waves."

CHRISTIAN HUYGENS formulated the theory of light waves in 1690, slightly before Newton. He may have been aware of what Leonardo had written, since his brother had purchased one of Leonardo's manuscripts.



AKG/ALBUM

## 7 Atmospheric refraction

LEONARDO used glass balls to show how rays of light deviate as they pass through the atmosphere. "See how the ray bends ... Carry out an infinite number of experiments like that and draw your own conclusions."

TYCHO BRAHE, a Danish astronomer, was the first to measure the refraction of light in the atmosphere in 1587. Later, in 1656, Giovanni Cassini analyzed the properties of the atmosphere that caused that effect.



ART ARCHIVE

## 8 Man is a machine

DISSECTIONS helped Leonardo come to the conclusion that the body is a mechanism. He wrote: "upon viewing this human machine, we should rejoice that God dedicated his intellect to the perfection of this tool."

RENÉ DESCARTES, in his *Discourse on Method* (1637), considered that animals are machines, formed by complex mechanisms of bones, nerves, arteries, and veins. In the 18th century this vision was also applied to humans.



AKG/ALBUM

TOP: The course of rivers  
BOTTOM: Nicolaus Steno

TOP: Study of the propagation of light  
BOTTOM: Christian Huygens

TOP: Light reflected in a mirror  
BOTTOM: Tycho Brahe

TOP: Anatomical drawing  
BOTTOM: René Descartes

In the comfortable drawing room of Appomattox Court House, Virginia, Union Gen. Ulysses S. Grant watches as Confederate Gen. Robert E. Lee signs the surrender of his army, the last hope of the Confederacy. After four years of bitter fighting, the civil war was effectively over.



# THE LAST WEEKS OF THE CIVIL WAR

On April 2, 1865, the strategic city of Petersburg fell to a Union assault. Just seven days later General Lee surrendered his Army of Northern Virginia, and within weeks official resistance ended. It was a dramatic collapse of the Confederate dream.

The world had never before seen a war of the magnitude of the conflict fought in North America between 1861 and 1865. People were shocked both by the enormous loss of life—perhaps as many as 700,000 deaths—and the huge financial cost. The Union is estimated to have spent at least \$2.3 billion waging the war at a time when its annual income was only around \$50 million, while the Confederate government imposed taxes that seemed intolerably high, even to Europeans wearied by decades of heavy war expenditure. People and governments were willing to make such sacrifices because vital issues were at stake: nationhood, democracy, and slavery. The Union, with its vast industrial and financial capacity, as well as its larger population, seemed to hold all the advantages. Yet it took four long years of bitter and bloody fighting before the Confederacy was finally defeated.

# Countdown to Union Victory

## JUNE 1864

Confederate and Union forces entrench outside Petersburg, the important rail center and gateway to Richmond.

## NOVEMBER 1864

Lincoln is reelected, ensuring that there will be no peace negotiations. Sherman's army begins its "march to the sea."

## APRIL 1-2, 1865

A Union breakthrough cuts Petersburg's railroad to Richmond. The Confederate government flees the capital.

## APRIL 3-8, 1865

Lee's army heads west, harried by Union cavalry. President Lincoln visits a smoldering Richmond.

## APRIL 9, 1865

Lee surrenders at Appomattox, the de facto end of the war. Just five days later Lincoln is assassinated.

## APRIL 18, 1865

Gen. Joseph E. Johnston surrenders his 90,000 strong army to Sherman in North Carolina.

## MAY 1865

Gen. Richard Taylor surrenders the remaining Confederate troops east of the Mississippi.

## JUNE 2, 1865

Gen. Kirby Smith surrenders his rebel forces, ending formal Confederate resistance.

## THE CRATER

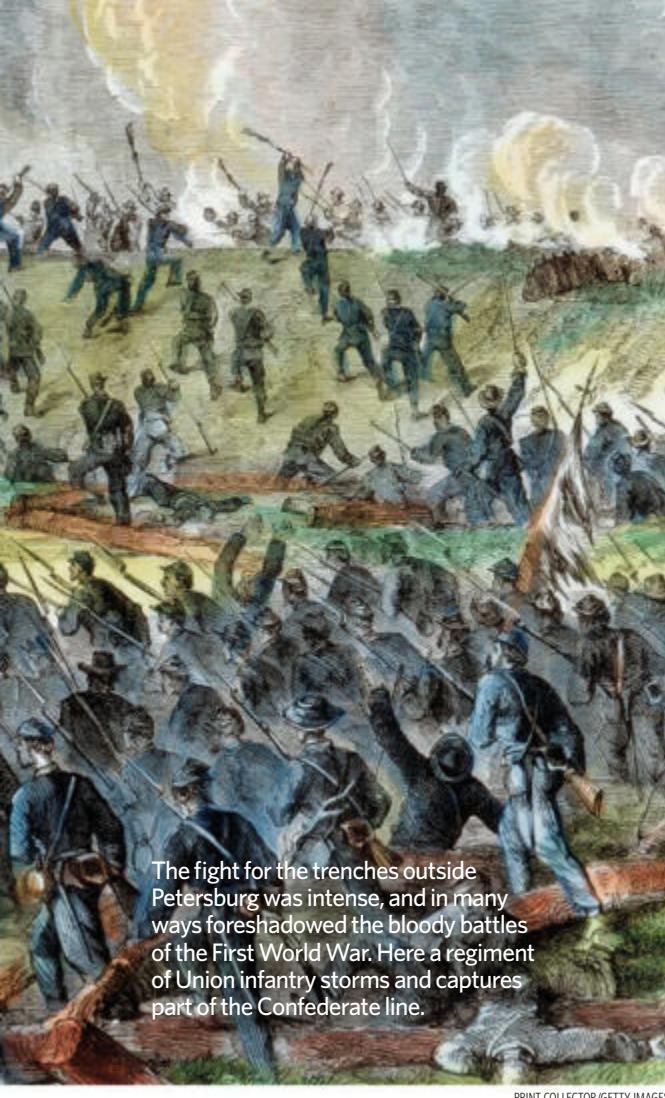
On July 30, 1864, almost 4,000 Union troops were killed after rushing headlong into a crater they'd blown behind Confederate lines. Grant would call it "the saddest affair I have witnessed in the war."

White Southerners faced rampant inflation, bread shortages, unrest among the enslaved population, enemy occupation, the destruction of crops, and a loss of life that few nations in modern history had endured. They did not suffer without complaint—there were food riots, mass desertions from the army, and constant challenges to the authority of the Confederate government—yet they fought on, and on. Even after the morale-shattering defeat at

Gettysburg, in July 1863, a battle that surely tarnished the air of invincibility around Confederate Gen. Robert E. Lee, it took almost two more years before the Union prevailed.

In the spring of 1864 Gen. Ulysses S. Grant led what should have been—based on the Union army's advantages in men, arms and supplies—a swift and crushing final campaign. Yet even then, Lee's underfed veteran forces parried, dodged, and withstood repeated assaults at places now evocative of the horrors of modern warfare—the





The fight for the trenches outside Petersburg was intense, and in many ways foreshadowed the bloody battles of the First World War. Here a regiment of Union infantry storms and captures part of the Confederate line.

PRINT COLLECTOR/GETTY IMAGES



BRIDGEMAN/INDEX

## THE SIEGE OF PETERSBURG

**GRANT DID NOT COMPLETELY** encircle Petersburg, and Lee could still communicate with Richmond. Elaborate lines of trenches, tunnels, lookout posts—even newly invented barbed wire—were constructed by both sides. Such field fortifications, uncommon earlier in the war, were a response to Grant's strategy of continuous pressure and not retreating back into camp between engagements.

Wilderness, Spotsylvania, and Cold Harbor—until they came to their final redoubt, Petersburg. Here, at the gateway to the Confederate capital of Richmond, they dug in and waited. Grant's men built, quite literally, a new city—City Point—expanding the existing town where the James and Appomattox Rivers met. From there, through vast networks of wharves, newly laid railroads, and a giant bakery, they could reinforce and resupply their besieging armies at will.

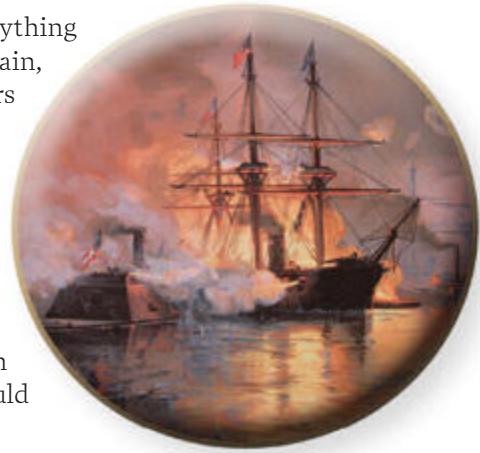
For months, from June 1864 to March 1865, the armies remained in essentially the same positions. Protected by the thin but heavily entrenched line at Petersburg, the Confederate government in Richmond persisted. And although their influence ran barely beyond the city limits, Confederate leaders still hoped, somehow, to turn the tide of war. Their hopes became increasingly unrealistic after September 1864, when the great railroad hub of Atlanta, Georgia, fell to the forces of Gen. William T. Sherman. From there Sherman began his destructive march to the sea—to Savannah, and then, turning north, through the swollen rivers

and seas of mud that made a wet South Carolina winter. Although there were still many parts of the Confederacy that had not yet seen a Union soldier, one by one the sources of Southerners' capacity to keep fighting were being knocked away. One of the most significant was the fall of Wilmington, North Carolina, to a naval assault in January 1865. This deprived the Confederacy of its last significant port and the vital weapons and ammunition brought in by blockade-running ships. If ever the writing was on the wall, surely it was then.

But by this stage, no one took anything for granted. Lee had eluded many vain, inept, and unlucky Union commanders before. Just maybe he could do it again. Perhaps, Lee's army could sneak away from the trenches of Petersburg. It could then join up with the only other sizable Confederate force, Gen. Joseph E. Johnston's army which was being pushed into the North Carolina mountains by Sherman. Maybe then this combined Confederate force could

### SUPPLY SHORTAGES

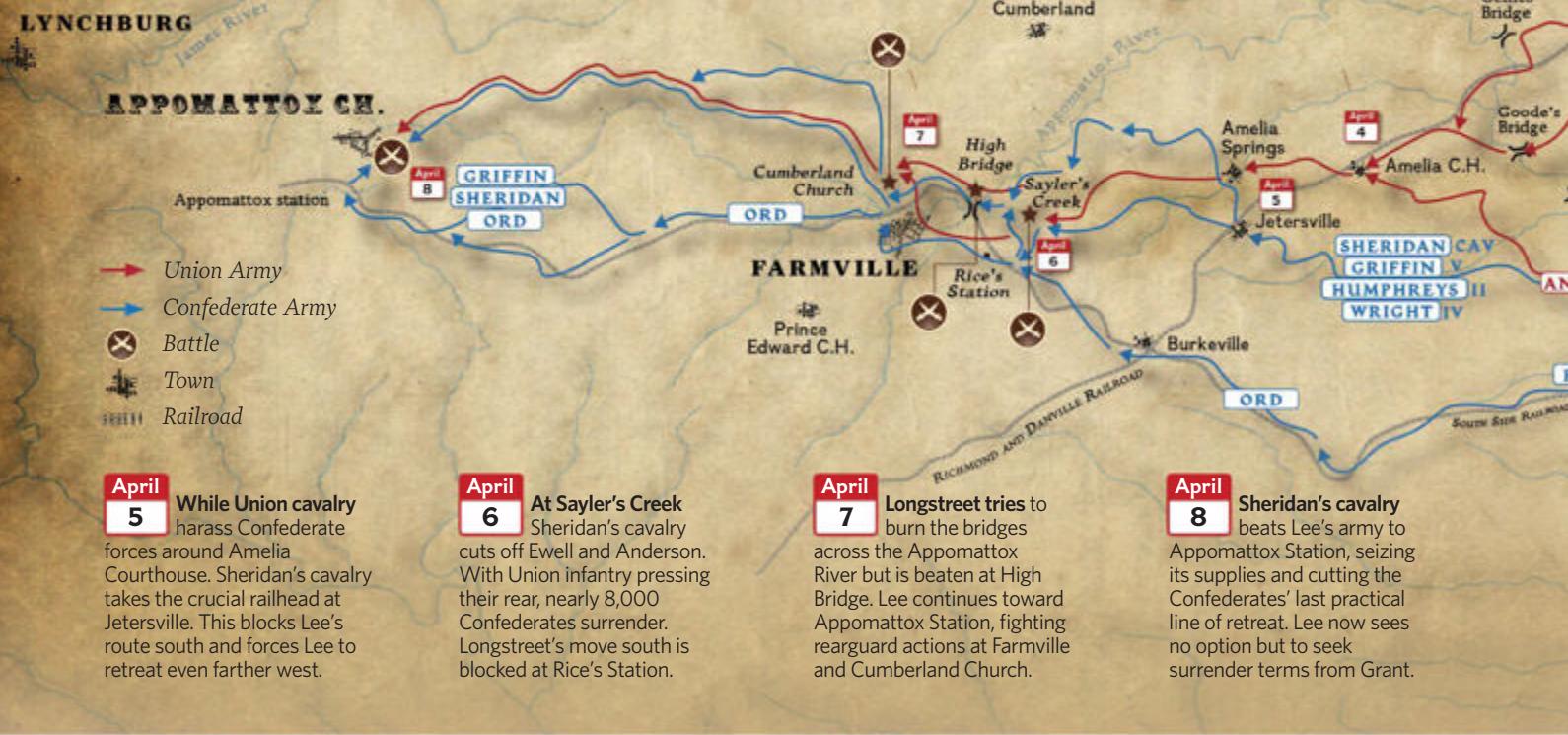
The Confederate Navy fought hard but failed to break the Union blockade. Instead, daredevil blockade runners, often fast steamships, brought essential war supplies from Europe.



BRIDGEMAN/INDEX

## LEE'S RETREAT FROM PETERSBURG TO APPOMATTOX

The Confederates' last hope was for Lee's Army of Northern Virginia to retreat and join up with Gen. Joseph Johnston's Army of North Carolina. Lee's hungry and exhausted army of around 30,000 men was vigorously pursued by over 100,000 Union troops in a desperate race to reach a railhead that could carry them to safety.



defeat Sherman, then march back to Virginia and deal with Grant. The Northern will to win would be broken at last, and the South would be free. It was sheer fantasy, but so long as Lee's army remained in the field, people who needed to could believe in it. After all, if Lee's army could prevent Grant from taking Richmond for months, despite being massively outnumbered and outgunned, anything might be possible.

But when the end came, it came quickly. In just nine days, Lee's army tried to flee, but instead it found itself trapped by overwhelming numbers. Surrounded on all sides, desperately hungry, depleted, and demoralized, they were comprehensively and suddenly defeated.

Over the winter, desertion and disease had steadily drained the last strength from Lee's army. By March 1865 he had a long defensive line and barely a thousand men per mile to hold it. The only question was whether Lee's men could escape to fight another day, before they were finally overwhelmed. On March 25 Lee or-

### THE BATTLE OF FIVE FORKS

*The capture of Five Forks crossroads by Union troops deprived Lee of any way to supply his defensive lines, and he was forced to abandon them. This left Richmond utterly exposed to a Union attack.*

dered a surprise attack on the Union-held Fort Stedman, east of Petersburg, in the hope that he would draw Union forces east, giving the rest of the Confederate Army half a chance to escape to the west. Union forces rolled back the Confederate assault with ease. On March 31 there were fleeting, faint echoes of past Confederate success, as the first waves of Union attackers were given hard fights. But on April 1, at the battle of Five Forks, Grant made the vital breakthrough, taking control of the railroad that connected Petersburg to Richmond. Despite disarray among the attackers, the Confederate lines were finally broken.

### The Confederate Collapse

Confederate President Jefferson Davis was in church on the morning of Sunday, April 2, when news reached him that the government had only a few hours to evacuate the city.

April

**4** Most of Lee's exhausted army reaches the railroad at Amelia Courthouse hoping to resupply and regroup. However no food had been sent from Richmond before its fall. Lee continues west.



BRIDGEMAN/INDEX



## THE END OF SLAVERY

**THE PASSAGE OF THE 13TH AMENDMENT** by Congress in January 1865 ensured that slavery would not survive Confederate defeat. While some enslaved people projected onto Lincoln the image of a Moses-like figure leading them out of bondage, the turmoil of war made it almost impossible to enforce the violent repression needed to sustain the slave system.

Those few hours had been hard-won by desperate last-minute, sometimes hand-to-hand combat by Confederate defenders. Davis's government had only one escape route, to the southwest along the only remaining open railroad, toward Danville. What was left of the Confederate treasury was loaded onto railroad trucks, along with government papers and as many leaders and their families as could commandeer space on the trains. As the evacuation was completed, relatively smoothly under the circumstances, Richmond burned, partly through deliberate acts of sabotage. Meanwhile, looters roamed the streets, including desperately hungry working-class men and women, white and black.

The following day, Union cavalry clattered through the dismal streets and ran up the Stars and Stripes above the Richmond capitol. On April 4 President Lincoln, who had been anxiously following the progress of this final assault from City Point, arrived in the conquered and battle-scarred city. Disembarking at the deserted wharves, near smoldering tobacco warehouses, Lincoln walked up the hill into

the center of the city, accompanied by his young son Tad and only a handful of soldiers. News of Lincoln's visit spread "as if on the wings of lightning" according to one black newspaper reporter, and the president was mobbed by crowds of former slaves looking to shake his hand and touch his coat. "I know that I am free," one was overheard saying, "because I have seen Father Abraham and felt him." The president asked for directions to the Confederate White House, now occupied by Union troops. Here Lincoln sat behind the desk that, just 48 hours before, had belonged to Jefferson Davis. If Lincoln felt a surge of triumph at that moment he didn't express it; instead he simply asked if someone could get him a glass of water.

Later, Lincoln visited a hospital where Union and Confederate wounded were being treated. In one bed lay a young rebel soldier, 17 years of age, whose leg had been amputated. As Lincoln approached, he turned away, his face "cold" and "harsh." The president "without an instant's

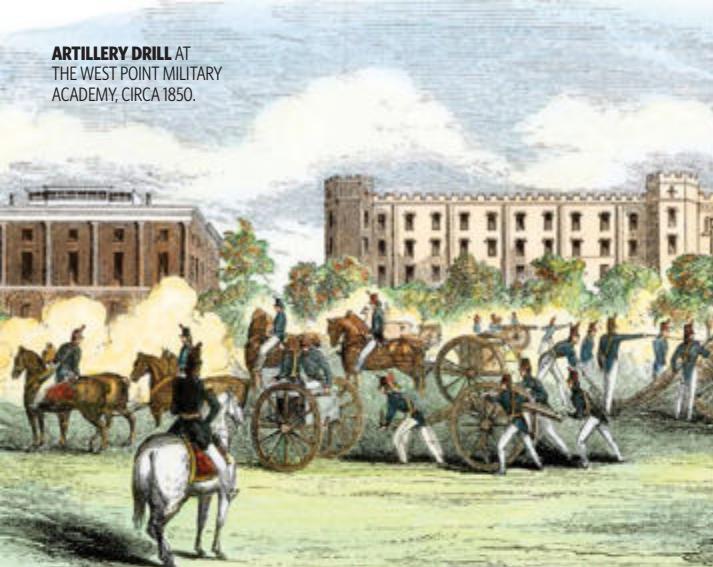


BRIDGEMAN/INDEX

## RICHMOND ABLAZE

As Confederate forces withdrew, they set fire to houses and warehouses to deprive Grant of supplies. With the city burning out of control, order soon collapsed and looters took to the streets.

ARTILLERY DRILL AT  
THE WEST POINT MILITARY  
ACADEMY, CIRCA 1850.



## LEE AND GRANT

Robert E. Lee and Ulysses S. Grant trod very different paths to their meeting at Appomattox. Among their few similarities, both were graduates of West Point and had been officers in the regular army. Both had served in the U.S.-Mexican War, 1846-48, during which they had met briefly.

AKG/ALBUM

further hesitation, stepped close-up to the boy, took his hand cordially in his own, and with a warm pressure and a look of respectful sympathy, said simply: ‘My boy, I hope we shall agree better some day,’ and passed on.” The young soldier “lay thoughtfully a few moments, and at last turned his face to his pillow and sobbed like a child.”

Meanwhile, some of Lee’s ragged army had not eaten for four days. Many had no ammunition. Few had boots that kept out the wet. As they marched, they were harried on both flanks by enemy cavalry while infantry snapped at their heels. On April 6 the rearguard of Lee’s army was roundly defeated and 8,000 men were lost. Most were captured, and as prisoners they enjoyed what seemed like a princely meal of the rations doled out routinely to Union troops. Thwarted in his attempt to go southwest to Danville (Grant’s men were there before him), Lee’s final scrap of a plan was

### APPOMATTOX COURT HOUSE

**Wilmer McLean**  
had been a farmer  
near Manassas  
when one of the  
war’s first battles  
was fought on his  
land. He sold up and  
moved southwest.  
Now, in an ironic  
coincidence, he was  
playing host to the  
war’s last rites.



AKG/ALBUM

to cross the Appomattox River, burn the bridges behind him to slow down his pursuers, and then bring up supplies by rail to Appomattox Station. But Union troops got to the precious supplies first, and by the evening of April 8 the trap had almost closed around the last, best hope of the Confederacy. “There is nothing left me but to go and see General Grant,” Lee is reported to have said, “and I would rather die a thousand deaths.”

On April 9, just seven days after leaving the entrenchments outside Petersburg, Lee met Grant in the home of Wilmer McLean, at Appomattox Court House. In McLean’s prosperously furnished drawing room Lee and Grant agreed terms of surrender that were regarded by virtually everyone as the end of the war. They did not discuss politics. Grant had no mandate to determine the form the peace would take in a constitutional or legal sense. He was empowered by Lincoln simply to accept the surrender of Lee’s army and noth-



BRIDGEMAN/INDEX

**GRANT REMINDED LEE OF THIS** at Appomattox, but Lee, with a courteous patrician air, is said to have claimed to have no memory of the earlier encounter. In most respects, however, their biographies could hardly have been more different. Lee was raised in an elite Virginian family; Grant was the son of a Galena, Illinois, tanner. Lee's military career in the small prewar Federal Army was successful, whereas Grant left the army and spent the prewar years failing at various businesses and drinking too much.

**WHILE LEE WAS THE CONFEDERACY'S** leading general in the spring of 1862, it was not until the start of 1864 that Lincoln made Grant general-in-chief of Union forces. By that time, Lee had become utterly identified with the Confederate cause, the dignified personification of the righteousness of the fight against Yankee aggression, as Southerners saw it. By contrast, "Butcher Grant" was respected rather than adored by his troops and the wider Northern public. Under Grant's leadership, Union casualty rates rose in the spring of 1864 to previously unimaginable levels. Lee's tactical genius won the Confederacy some stunning victories against numerically superior forces. Grant's strength was his grasp of grand strategy—his understanding of how all the elements of the Union war effort had to fit together to achieve victory.



GETTY IMAGES

ing more. But nevertheless, the agreement established a powerful, though not uncontested, template for postwar reconciliation. On one hand, Grant promised Lee that his men would be "paroled"—not "disturbed by United States authority," and certainly not imprisoned, or prosecuted—on condition that they obeyed the laws and did not take up arms again. And on the other hand, Lee thanked his men for their sacrifices, made the important and reassuring observation that they had been defeated in the end only because they were overwhelmingly outnumbered, and urged them to go home and be peaceful citizens of the United States.

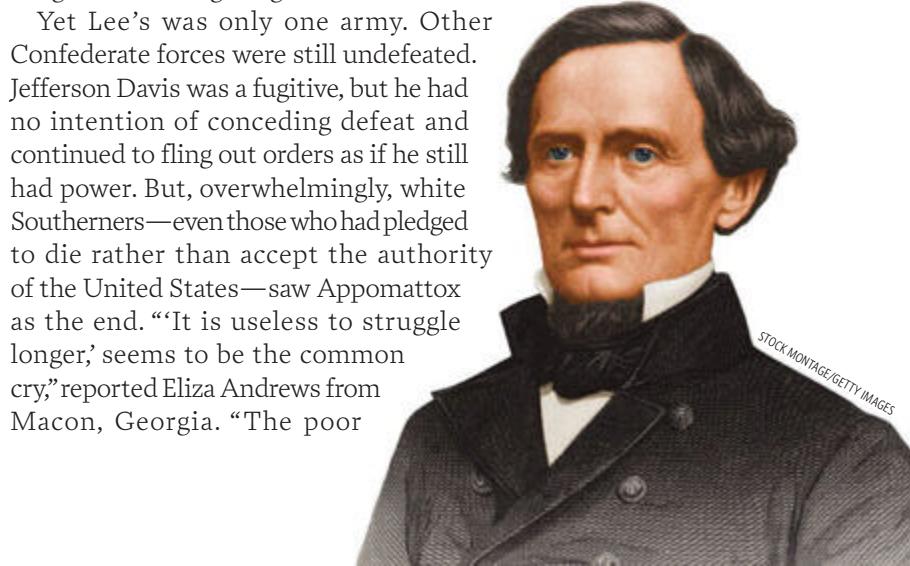
This moment of civility at the end of such a bloody and uncivil civil war was, at the time, and ever since, seen as redemptive. That so many Americans had willingly embraced violence as a way of resolving their differences called into question the viability of democracy as a system. It was the most spectacular breakdown of the democratic process. Yet a dignified, respectful end to the violence gave hope that the system could work again in the future.

The agreement at Appomattox closed off one possible alternative: that Lee could have ordered his men to resist the invading armies as small guerrilla bands. One of Lee's artillery officers suggested this move on the morning of April 9. But Lee dismissed the idea, warning that in response the Union Army would simply step up their war against the infrastructure and civilians of the South. In any case, if the South no longer had a functioning civilian authority, what would the guerrillas be fighting for?

Yet Lee's was only one army. Other Confederate forces were still undefeated. Jefferson Davis was a fugitive, but he had no intention of conceding defeat and continued to fling out orders as if he still had power. But, overwhelmingly, white Southerners—even those who had pledged to die rather than accept the authority of the United States—saw Appomattox as the end. "'It is useless to struggle longer,' seems to be the common cry," reported Eliza Andrews from Macon, Georgia. "The poor

## JEFFERSON DAVIS

President Davis was from a wealthy slaveholding family in Mississippi. White Southerners had far less faith in him than in Lee. Davis urged continued resistance until he was captured in Georgia.



\* \* \*

# THE ARMY OF NORTHERN VIRGINIA



**I**N THE FINAL WEEKS of the war, General Lee's Army of Northern Virginia was hopelessly outnumbered. At Appomattox only about 28,000 men laid down their arms. Grant's forces, in contrast, numbered around 100,000. The decline of the Confederate forces was painful to the South. This, after all, was the army that had once been 90,000 strong. With Gen. "Stonewall" Jackson as one of its corps commanders and Gen. J. E. B. Stuart leading its cavalry, it had won stunning victories at Second Bull Run (1862), Fredericksburg (1862), and Chancellorsville (1863). But, especially from the spring of 1864 onward, the army had been steadily worn down by desertion and disease as well as by battle casualties. As important as the numbers was the desperate shortage of supplies. During the siege of Petersburg, Confederate soldiers were surviving on a meager diet of cornmeal and beef. Scurvy-ridden, suffering from the rats and damp of the trenches, poorly shod and with inadequate blankets to protect them from the bitter winter, veterans, with a darkly comic allusion to Victor Hugo's popular novel of the time, called themselves "Lee's Miserables."





## PARADE ON PENNSYLVANIA AVENUE

Even before Kirby Smith's surrender in Texas, the Union Army staged a massive military review in Washington, D.C., celebrating the survival of the Union and all it represented.

wounded men go hobbling about the streets with despair on their faces." In Tallahassee, Susan Bradford Eppes felt as if "the very earth had crumbled beneath our feet."

With no civilian leadership, no means of supply, and no strategic plan, General Johnston met with General Sherman near Durham, North Carolina, on April 26 to agree to surrender terms for his army. While politically much less important than Appomattox, numerically this was by far the most significant surrender: Johnston had three times as many men as Lee, although they were just as underfed and demoralized after months of retreating in the face of Sherman's relentless onslaught. On May 4 Gen. Richard Taylor (son of President Zachary Taylor) surrendered a much smaller force at Citronelle, Alabama. On May 10 Jefferson Davis was finally captured, and taken to his imprisonment at Fortress Monroe. And on June 2 in Texas, Gen. Edmund Kirby Smith surrendered the last regular Confederate forces.

So Appomattox wasn't officially the end. There was no peace treaty, there could not be as

## GUNSHOT THAT SHOOK THE PEACE

**L**ESS THAN A WEEK after Appomattox came the shock of the assassination of President Lincoln. This threatened to turn the course of the war once more—not back in favor of the Confederacy (though many imagined the act was Davis's last desperate bid for independence) but, because of the outraged calls for vengeance, in favor of a far harsher military subjugation of the South than had been envisaged in Wilmer McLean's quiet rural home. While the immediate anger passed, Lincoln's violent death was one of the factors that enabled Republicans in Congress to demand Confederate compliance with measures—such as black suffrage—that would have appalled the surrendering Southern soldiers at Appomattox.

there was no recognized Confederate authority with whom to make peace. Indeed, unofficial Southern resistance continued over the following decade as secretive terrorist organizations like the Ku Klux Klan violently opposed Washington-backed regimes. But in reality, Appomattox was the end because Lee made it so. The man in whom Southern hopes had been invested, who had a near-godlike status never remotely equaled by any political leader in the South, had effectively called an end to the war. And so the war ended. On June 17 the Virginian fanatic Edmund Ruffin, perhaps the Confederacy's last true fighter, who had spent his life exhorting fellow Southerners to fight for independence, shot himself with his musket. The war was over. ■

ADAM I. P. SMITH

SMITH SPECIALIZES IN THE POLITICAL HISTORY OF AMERICA IN THE 19TH CENTURY.

*Learn more*

**BOOKS**

*The American Civil War*

Adam I. P. Smith, Palgrave Macmillan, 2007.

*Recollections and Letters of Robert E. Lee*

Robert E. Lee, Dover Publications Inc, 2007.

# WORDS FROM THE FINAL WEEKS

Whether you were Union or Confederate, victor or vanquished, the end of the war brought



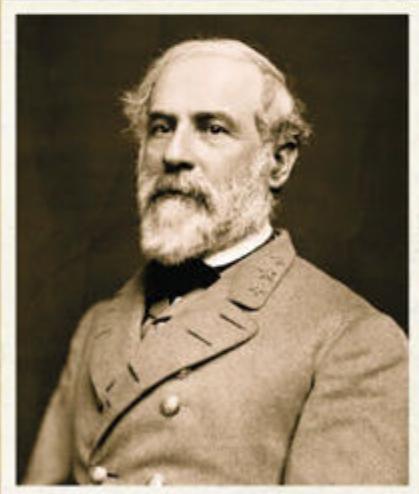
**Elisha Hunt Rhodes**

*Excerpt from the diary of Elisha Hunt Rhodes,  
Second Rhode Island Volunteers, April 9, 1865*

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Sunday, April 9, 1865, Appomattox C.H.—The Rebels are half starved, and our men have divided their rations with them. The 2nd R.I. had three days rations and after dividing their rations with the Rebels will have to make a day and half's rations last for three days. But we did it cheerfully. Well I have seen the end of the Rebellion. I was in the first battle fought by the dear old Army of the Potomac, and I was in the last. I thank God for his blessing to me and that my life has been spared to see this glorious day. Hurrah! Hurrah! Hurrah!

Monday, April 10, 1865, Appomattox C.H.—It seemed queer to sleep last night without fearing an attack, but the Rebels are now all under guard. I have talked with some of them and find that they are as glad as we that the war is over. They all seemed surprised at our kind treatment of them, and I think General Grant's way of managing affairs will help on the peace that must come.



**Gen. Robert E. Lee**

*Gen. Robert E. Lee's General Order No 9 to the  
Army of Northern Virginia, April 10, 1865*

---

After four years' of arduous service, marked by unsurpassed courage and fortitude, the Army of Northern Virginia has been compelled to yield to overwhelming numbers and resources. I need not tell the brave survivors of so many hard-fought battles, who have remained steadfast to the last, that I have consented to this result from no distrust of them; but, feeling that valor and devotion could accomplish nothing that could compensate for the loss that would have attended the continuation of the contest, I determined to avoid the useless sacrifice of those whose past services have endeared them to their countrymen. By the terms of the agreement, officers and men can return to their homes and remain until exchanged. You will take with you the satisfaction that proceeds from the consciousness of duty faithfully performed and I earnestly pray that a merciful God will extend to you his blessing and protection ... I bid you an affectionate farewell.

# OF THE AMERICAN CIVIL WAR

universal reflection on the suffering experienced by both sides in four years of conflict.



**Eliza Frances Andrews**

*Excerpt from the diary of Eliza Frances Andrews,  
Georgia, April 18, 1865*

---

We made a brave fight but the odds against us were too great. The spell of invincibility has left us and gone over to the heavy battalions of the enemy ... As I drove along from the station to the hotel, I could see that preparations were being made to evacuate the city. Government stores were piled up in the streets and all the horses and wagons that could be pressed into service were being hastily loaded in the effort to remove them. The rush of men had disappeared from Mulberry St. No more gay uniforms, no more prancing horses, but only a few ragged foot soldiers with wallets and knapsacks on, ready to march—Heaven knows where ... I heard fresh rumors of Lee's surrender. No one seems to doubt it, and everybody feels ready to give up hope. "It is useless to struggle longer," seems to be the common cry, and the poor wounded men go hobbling about the streets with despair on their faces. There is a new pathos in a crutch or an empty sleeve, now, that we know it was all for nothing.



**Gen. Ulysses S. Grant**

*Excerpt from the Personal Memoirs of  
Gen. Ulysses S. Grant, 1885*

---

When I went into the house I found General Lee. We greeted each other, and after shaking hands took our seats.

What General Lee's feelings were I do not know. As he was a man of much dignity, with an impassable face, it was impossible to say whether he felt inwardly glad that the end had finally come, or felt sad over the result, and was too manly to show it. Whatever his feelings, they were entirely concealed from my observation; but my own feelings, which had been quite jubilant on the receipt of his letter, were sad and depressed. I felt like anything rather than rejoicing at the downfall of a foe who had fought so long and valiantly, and had suffered so much for a cause, though that cause was, I believe, one of the worst for which a people ever fought, and one for which there was the least excuse. I do not question, however, the sincerity of the great mass of those who were opposed to us.

# The Lost Treasure of the Nuestra Señora de Atocha Galleon

In 1985, after years of searching the Florida seafloor, a treasure hunter finally found his prize: a sunken Spanish ship laden with riches.

In the summer of 1622, a large Spanish fleet set sail from Cuba for Spain, laden with fabulous riches from Mexico and Central America. It was led by guard galleons, heavily armed ships that carried in their holds the most valuable treasure. Such a voyage was undertaken every year, but in 1622 the fleet delayed its departure; it finally left Cuba on September 4—the middle of the hurricane season. As the vessels headed toward the Bahama Channel, they were struck by a terrible storm. That night, September 5, eight ships sank. Among them the *Santa Margarita* and the *Nuestra Señora de Atocha*, two galleons packed with almost unimaginable wealth.

In the following decades the Spanish organized salvage operations that managed to recover large amounts of gold and silver from the



*Santa Margarita*. Yet despite the disaster's five sole survivors testifying that the *Nuestra Señora de Atocha* had sunk near the *Margarita*, the second ship could not be found. The Spanish stopped looking and in time the fleet and its treasure were forgotten.

## A Tantalizing Trail

In the late 1960s a California scuba diving instructor named Mel Fisher retraced the fatal voyage of the Spanish vessels using documents uncovered in the Archive of the Indies,

held in Spain. Fisher had taken part in the exploration of another Spanish fleet sunk by a hurricane in 1715 and found near Florida's Vero Beach in 1963. The *Atocha* was an equally alluring prize, and Fisher decided to start searching. He created a company called Treasure Salvors, and involved his entire family in the adventure. He equipped himself with what was, at the time, state-of-the-art technology: A proton magnetometer for detecting iron objects underwater and a Loran navigational system, the forerunner of today's GPS.

Fisher also included a specialist with academic training on his team. Duncan Mathewson, a young archaeologist who had never worked on a shipwreck, received the following telegram from Fisher: "I found the remains of two 17th-century shipwrecks. I

need an archaeologist. I'm sending you a round-trip ticket."

Explorations began in 1971, and they soon discovered

YORGOS LAMPATHANIS/NGS



1971

After four years searching for the *Nuestra Señora de Atocha*, Mel Fisher finds an anchor and a musket ball.

1975

Four more years pass before Fisher finds the ship's cannon. A few days later, his son Dirk dies in a boat accident.

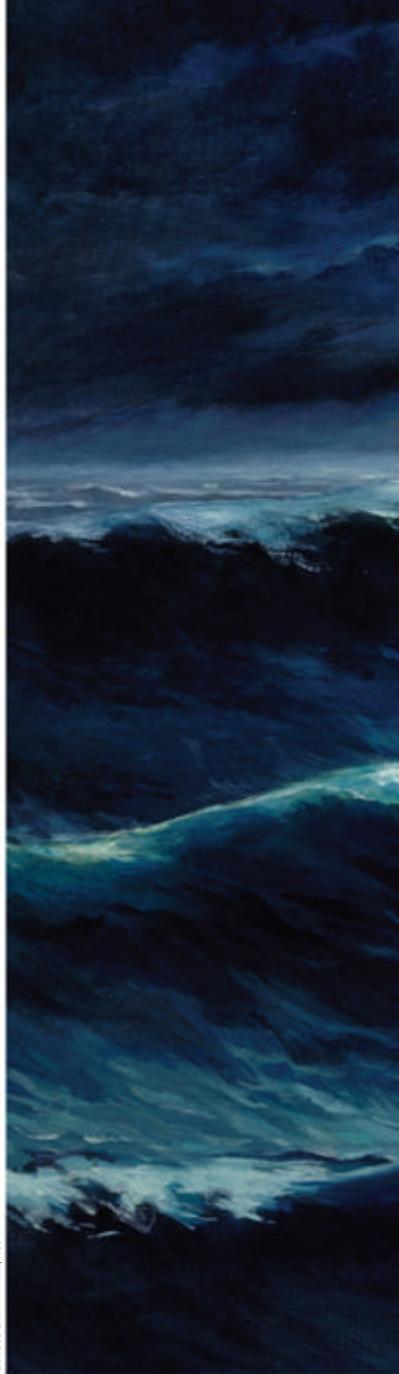
1985

On July 20 he finally finds the *Nuestra Señora de Atocha* in the Hawk Channel. The bulk of its cargo is still inside.

1988

Most of the *Atocha*'s treasure is auctioned by Christie's in New York. The Spanish government recovers a few items.

A GOLD-PLATED SILVER TRAY RECOVERED FROM THE *ATOCHA* THAT DEPICTS THE MYTH OF PHAETHON DRIVING THE SUN CHARIOT.





THE *NUESTRA SEÑORA DE ATOCHA* had been built in 1620, just two years before sinking into the Atlantic Ocean with all its cargo.

an enormous anchor south of Key West. The team was almost certain it belonged to the *Atocha*. After that they began making many more finds: gold chains, silver ingots, astrolabes (an early navigational tool). Yet there was no trace of the *Atocha* itself. Everything seemed to indicate that the galleon had spilled some of its precious cargo before sinking.

In 1975 the divers came

across definitive proof that the *Atocha* was in the area: two groups of bronze cannon with inscriptions matching the registry numbers on the ship's manifest, the document that listed its cargo. The galleon and its fabulous treasures couldn't be far away. But a few days after this exciting discovery tragedy struck: the boat carrying Fisher's son Dirk and his daughter-in-law sank. They both died, along

## MORE TO BE FOUND

**EVEN THOUGH** Mel Fisher managed to recover treasure worth about \$500 million, not all of the ship's precious cargo was located. The sterncastle of the ship hasn't been found yet. One of Mel's sons is leading the search for it, believing it contains another \$400 million in treasure.



AP IMAGE/GTRES

# Gold and emeralds on board the *Atocha*

**THE NUESTRA SEÑORA DE ATOCHA** didn't simply carry gold and silver ingots in bulk; incredibly elaborate pieces of jewelry were also among the possessions of the ship's passengers. These are some of the treasures that it was carrying when it was claimed by the sea nearly 400 years ago.



V. BOSWELL/NGS

**① Emerald cross**

A large cross set with 65-carat Colombian emeralds was found in a silver jewelry box.

**② Silver bowl**

This scalloped silver bowl, plated in gold, was found in perfect condition.

**③ Silver set**

Also recovered were a small cup, a teaspoon, and the top of a filigreed box, all in silver.

**④ Gold belt buckle**

It is set with Southeast Asian rubies, Venezuelan pearls, and diamonds from South America.

with one of the divers. Over the following years the search continued, although doubts grew about the exact location of the *Atocha*. Fisher insisted on searching the shallows, whereas Mathewson believed that the wreck lay in deeper waters. In 1980, Kane Fisher, another of Mel's sons, found the remains of the *Margarita*. It held the part of its cargo that the Spaniards hadn't managed to retrieve. Mel Fisher now finally agreed to follow his archaeologist's advice and search areas of deeper water. Still nothing. As Fisher's fears of failure set in, he tried one last survey in the Hawk Channel. On July 20, 1985, the Treasure Salvors office received an excited radio

message from an ecstatic Kane Fisher: "Put the charts away! We've got it, we've got it! Silver bars!" The remains of the *Atocha*'s hull lay at a depth of 52 feet; Mathewson had been right all along.

### A King's Treasure

The team recovered a cargo containing more than 1,000 silver ingots, 125 gold bars and disks, 100,000 silver and gold coins, and a wide selection of personal objects belonging to the crew and passengers. The most stunning pieces include a gold belt studded with rubies, identical to one worn by Philip II of Spain in a portrait. There were also richly decorated gold plates and cups, one inset with a bezoar,

a stone used as an antidote for poisons; a complete collection of medical instruments; carved ivory boxes from Ceylon; and religious jewelry, such as rosaries, crosses, and rings with rubies and other precious stones.

The reports published by Mathewson contain little archaeological information, but they do provide interesting data. For example, they showed how much contraband there was on the Spanish vessels: Fisher found 3,000 Colombian emeralds that do not appear on the manifest. The ship was also transporting large gold chains, a tax dodge; unlike gold bars they were considered manufactured goods, which were ex-

empt from taxation. A small part of the treasure recovered from the 1622 wreck can still be seen today in the Mel Fisher Maritime Heritage Society Museum, run by the Fisher family in Key West, Florida. The bulk of the discoveries were auctioned in New York by Christie's in 1988. ■

XABIER ARMENDARIZ

### Learn more

**FILM**  
*Dreams of Gold: The Mel Fisher Story*  
1986

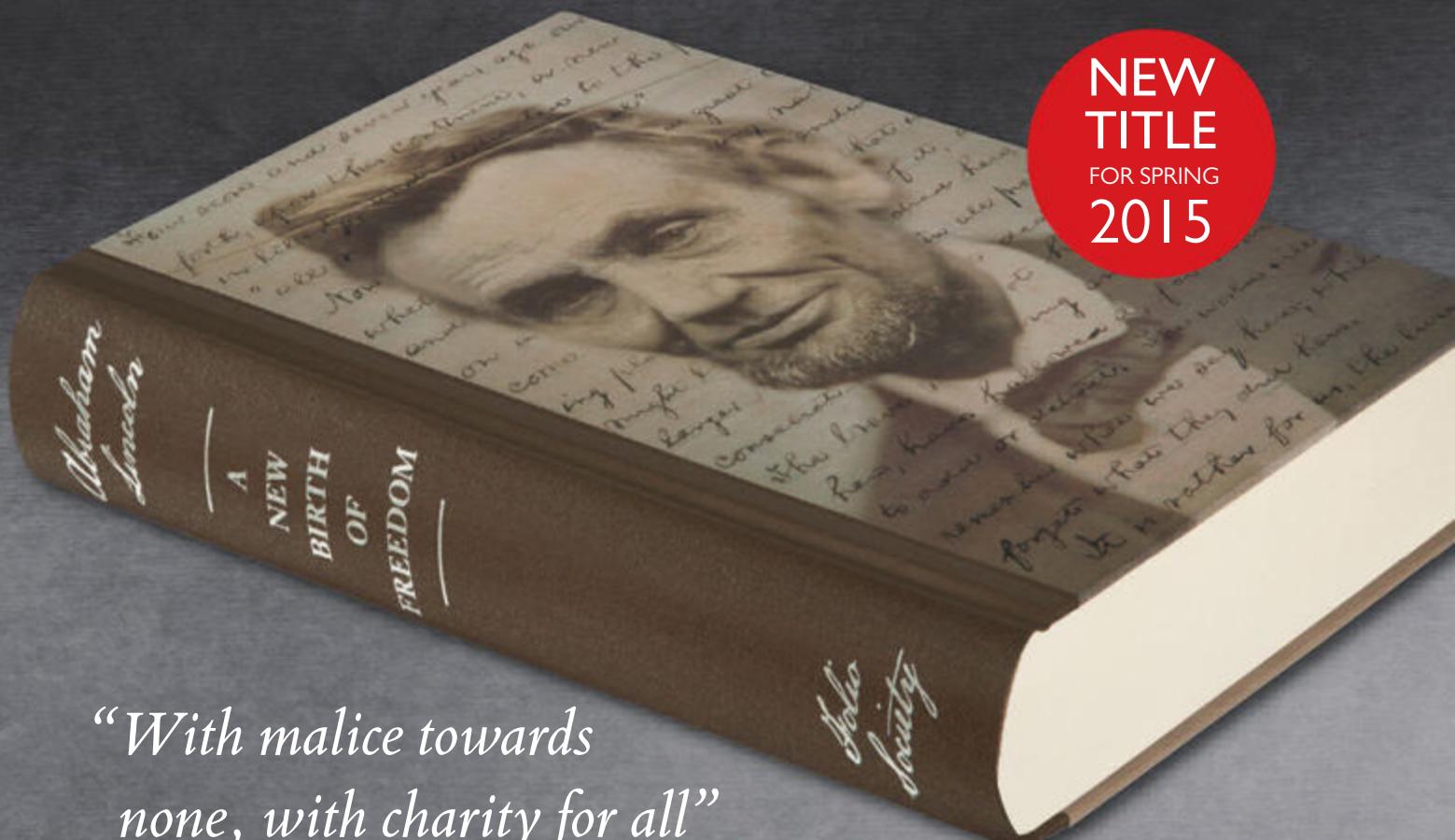
**BOOKS**  
*Fatal Treasure: Greed and Death, Emeralds and Gold, and the Obsessive Search for the Legendary Ghost Galleon Atocha*  
Jedwin Smith, John Wiley & Sons, 2005  
*Spanish Galleon 1530-1690*  
Angus Konstam, Osprey Publishing, 2004

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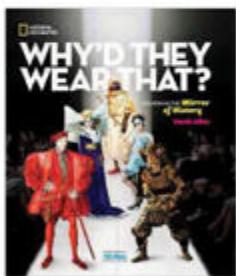
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# Who Was Wearing What When... and Why



**Sarah Albee**  
**WHY'D THEY WEAR THAT?**  
National Geographic, 2015, 192 pp., \$19.99

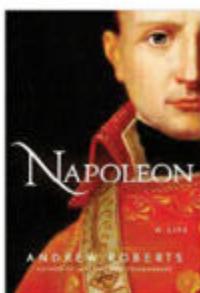
**L**ong before the dawn of history humans began covering their bodies with some form of clothing. At first these were necessary adaptations to climate or circumstance: layers of animal skins sewn together with animal gut helped to keep us warm in winter. Then, over time, clothes started to serve more than a purely functional purpose—they increasingly made a statement about a person, a people, a place, or a period of time. This means that when studying history,

what someone wore can tell us a lot about the social, economic, political, and moral climates in which they lived.

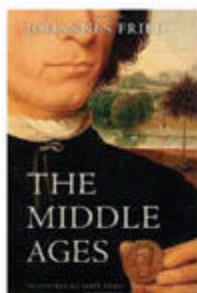
*Why'd They Wear That?* takes a lighthearted but illuminating look at the astonishing array of clothes that have been dreamed up, made up, and worn by people through the ages all around the world. The authors not only describe the clothes and how they were made but also provide a fascinating historical context for them, helping to explain why they

were worn and adding a fresh dimension to our knowledge of the past.

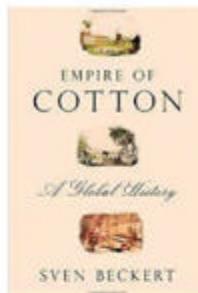
For example, in the 12th century B.C. Assyrian warriors rode into battle wearing pointed helmets that helped to protect them from “whirlers,” enemies who would fling sharpened stones at them from as much as 650 feet away. Thomas Becket, the Archbishop of Canterbury, murdered in his cathedral by knights, wore a scratchy hair shirt riddled with bugs to atone for his past sins and express his piety. Whether it is togas, ruffs, or miniskirts, every piece of clothing has a purpose and a meaning that reflects the who, where, and when of its creation: Fashion mirroring history. ■



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Laura Ingalls Wilder  
South Dakota State Historical Society Press, 2014. 472 pp., \$39.95

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# Next Issue



SIMON NORFOLK/NB PICTURES/CONTACTO

## ROME: THE FACTS BEHIND THE LEGEND OF THE IMPERIAL CITY

**ROMULUS AND REMUS** were twin brothers born of divine and royal blood but abandoned in the wild, suckled by a she-wolf, raised by a peasant, and responsible for founding Rome. Or so says the legend, an epic tale befitting a city that was the heart of the mighty Roman Empire. It was also a story that held significant political influence, a tale that was twisted, retold, renounced, affirmed, and celebrated according to the needs of Rome's kings, consuls, emperors, and dictators. But, historians now wonder, could there be a kernel of truth behind the legend of Romulus and Remus?

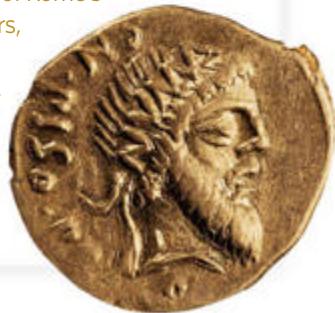


PHOTO: AIS

## TIKAL, LONG-LOST CITY OF THE ANCIENT MAYA

### CENTURIES BEFORE

any European set foot in the Americas, the Maya civilization was building cities every bit as impressive as anything the Old World had to offer. And none more so than Tikal, the famed city found hidden in the depths of the Guatemalan rain forest. The ruins of Tikal's monumental plazas, palaces, and pyramids are a worthy testament to an advanced civilization, while its many stelae, towering commemorative stone slabs, tell the story of the city's rise and fall.

## The Rosetta Stone: Unlocking Egypt

For centuries the hieroglyphs used by ancient Egyptians remained an undecipherable mystery. Then, in 1799, the Rosetta stone provided the key to cracking the code.

## Swords in the Holy Land

The Order of the Knights Templar, founded in the 12th century to protect Christian pilgrims, combined two seemingly irreconcilable activities: praying and fighting.

## How Jamestown Made America

In 1619 the Jamestown colonists witnessed two events of momentous importance to American history: the country's first legislative assembly and the arrival of African slaves.

## The Invention of the Vaccine

Before Edward Jenner, smallpox was one of the world's deadliest diseases. Jenner's powers of observation, some cows, and a few dairymaids were crucial in its final defeat.

eye to eye

# Durban

SOUTH AFRICA



“

Mr. President, I have come to report to you  
that South Africa is free today.

Nelson Mandela (Nelson Mandela casting his vote at  
Ohlange High School, Durban, 1994)

”

Durban (in Zulu 'eThekwini', derived from itheku meaning a bay or lagoon). A city established in 1824 on land granted by King Shaka. A fusion of citizens of Zulu, English and Indian heritage. A tourist mecca for over 150 years.

eye to eye

# Durban

SOUTH AFRICA



“ The greatness of a nation,  
and its moral progress can be  
judged by the way its animals are treated. ”

Mahatma Gandhi (Durban resident 1893 – 1914)

Durban (in Zulu 'eThekwini', derived from itheku meaning a bay or lagoon). A city established in 1824 on land granted by King Shaka. A fusion of citizens of Zulu, English and Indian heritage. A tourist mecca for over 150 years.